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[Contribution from the Office of Markets and Rural Organization,
Charles J. Brand, Chief.]

MEAT SITUATION IN THE UNITED STATES.

PART V.

METHODS AND COST OF MARKETING LIVE STOCK AND MEATS.

BY

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EXPLANATORY STATEMENT.

In the winter of 1913–14 a committee of well-known investigators, familiar with agricultural conditions, was appointed by the Secretary of Agriculture to consider the economics of the meat situation. This committee was composed of Dr. B. T. Galloway, Assistant Secretary of Agriculture, as chairman; Dr. H. J. Waters, president of the Kansas State Agricultural College; Prof. C. F. Curtiss, dean of the Iowa State College of Agriculture and Mechanic Arts and director of the Iowa Agricultural Experiment Station; H. W. Mumford, professor of animal husbandry, University of Illinois; Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, United States Department of Agriculture; and Dr. T. N. Carver, Director of the Rural Organization Service, United States Department of Agriculture. Mr. Leon M. Estabrook, Chief of the Bureau of Crop Estimates, was made secretary of the committee.

No formal report was prepared by this committee, but, at the suggestion of the committee, independent inquiries dealing with several phases of the meat situation were undertaken by specialists of the United States Department of Agriculture. The results of these inquiries have been crystallized by the department in a series of five reports, under the general title of the "Meat Situation in the United States," each report complete within itself and bearing a separate number in the series of reports of the Office of the Secretary, as follows:

Part I. Statistics of Live Stock, Meat Production and Consumption, Prices, and International Trade for Many Countries. By George K. Holmes, Bureau of Crop Estimates. (Report No. 109.)

Part II. Live Stock Production in the Eleven Far Western Range States. By Will C. Barnes and James T. Jardine, Branch of Grazing, Forest Service. (Report No. 110.)

Part III. Methods and Cost of Growing Beef Cattle in the Corn Belt States. By J. S. Cotton and Morton O. Cooper, Office of Farm Management, and W. F. Ward and S. H. Ray, Animal Husbandry Division, Bureau of Animal Industry. (Report No. 111.)

Part IV. Utilization and Efficiency of Available American Feed Stuffs. By W. F. Ward and S. H. Ray, Animal Husbandry Division, Bureau of Animal Industry. (Report No. 112.)

Part V. Methods and Cost of Marketing Live Stock and Meats. By Louis D. Hall, F. M. Simpson, and S. W. Doty, Office of Markets and Rural Organization. (Report No. 113.)

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METHODS AND COST OF MARKETING LIVE STOCK AND MEATS.

SUMMARY.

Three general methods of marketing are open to producers of meat animals: First, through the large public stock yards and packing centers; second, by means of local butchers and packers; and third, in the form of farm-prepared meats.

Investigations conducted by the Office of Markets and Rural Organization indicate that in the United States the practice of shipping live stock to centralized markets prevails most generally in the Central States and that the greatest prevalence of local marketing is found in the extreme eastern, western, and southern sections. Estimates show that about one-half of the beef cattle, two-thirds of the hogs, and four-fifths of the sheep and lambs marketed pass through the large central markets; one-third of the beef cattle, one-twelfth of the hogs, and one-eighth of the sheep and lambs are sold for local slaughter; one-tenth of the beef cattle, one-third of the hogs, and one-twentieth of the sheep and lambs are slaughtered on farms and ranges.

Data obtained concerning the time of buying stockers and feeders and the selling of finished animals show that these operations are confined too generally to a few months of the year. Although movements of live stock are subject in a large degree to the same natural conditions that fix the limits of the grazing season and the availability of feed stuffs, it is manifest that stock-feeding operations are susceptible of better adjustment to market conditions. Such adjustments would exert a marked influence toward a more even distribution of the supply.

In the United States relatively more sheep are shipped in carload lots by owners than any other class of live stock; cattle follow second, hogs third, and calves fourth. More hogs are marketed by local dealer-shippers than other classes of live stock, and calves, cattle, and sheep follow in the order named. The average margin received by the local dealer-shipper varies inversely as the volume of business in the different States.

Seven hundred and fifty organizations in 15 States are marketing cattle in a cooperative way. Four hundred and thirty of these organizations are primarily live-stock shipping associations. Two hundred and fifteen of the cooperative live-stock shipping associations are located in the State of Minnesota. Cooperative live-stock shipping associations bring greater net returns to the farmer because of the reduction of marketing expenses and the realization of actual market prices. These associations also have educational features which are of importance to any community having live stock to market in small lots.

Live stock is sold direct to packers in California more generally than in any other State or section. This practice is most characteristic of the western group of States in general. Direct marketing will remain an important factor in those parts of the country remote from centralized markets. The present tendency and effect of direct country buying in the Middle West, particularly as regards hogs marketed from the corn belt, is a matter of much discussion.

Average freight rates on live stock for the years 1911–1913 were 10 cents per hundredweight for eastern or official territory, 11.9 cents for southern territory, and 14.9 cents for western territory. Replies to inquiries show that train service is satisfactory in a majority of cases. The total claims for live-stock loss and damage in transit on 27 railroads amounted to $1,245,477.81 during the fiscal year 1913–14. Railroads show wide variation in efficiency in handling live stock, the claims paid being 19 per cent of the revenue in one case and less than 0.5 per cent in another.

The largest single factor in the marketing of meat animals in the United States is the system of centralized live-stock markets. These markets not only are a medium through which live stock is sold for slaughter, but a large proportion of stocker and feeder cattle also passes through them. The terminal charge at most centralized markets is $2 per car. Yardage is 25 cents a head on cattle, 10 cents on calves, 8 cents on hogs, and 5 cents on sheep at a majority of the markets. Commission charges are 60 cents per head on cattle, 25 cents on calves, 20 cents on hogs, and 10 cents on sheep at most markets.

Wholesale slaughtering and meat packing constitute the chief outlet for market stock suitable for slaughter. The most extensive development of meat packing is found at Chicago and Missouri River points. The total value of the products of wholesale slaughtering and meat packing in the United States was $1,651,765,424. The number of establishments engaged in the business was 1,279 in 1914. Concentration of ownership is one of the striking features of the industry.

The Bureau of the Census reported that in 1909 40 per cent of the cattle, 61 per cent of the calves, 17 per cent of the sheep and lambs, and 36 per cent of the hogs were slaughtered in retail slaughterhouses and on farms.

Public abattoirs have been established in 22 cities in 13 States. Seven of these establishments are owned and operated by the city, while the remaining 15 are owned privately and operated under city inspection.

Local packing houses are distributed mainly in the more important live-stock producing States and in sections remote from live stock markets and packing-house centers. Cooperative packing houses recently have been promoted in a number of communities in six States. Only two of these establishments have been built and operated as yet.

The marketing of farm-prepared meats, although comparatively limited in relation to the industry as a whole, is practiced more or less in almost all parts of the country. The curing of meat at ice plants is a recent development in local marketing in the South. Surplus hogs in a community may be marketed at these plants and the plants obtain additional revenue by the utilization of their equipment and storage rooms in the dull season. The parcel-post division of one of the large cities of the Middle West handled, during 1915, 5,316 packages of poultry, 4,893 packages of fresh meats, 4,116 packages of cured meats, and 262 packages of lard. This method of marketing meat is limited in comparison with the other methods, yet the amount thus marketed is considerable as a sum total.

The correlation between average live-stock and meat prices is closer than generally is understood. Daily fluctuations in live-stock quotations frequently are large and abrupt and constitute one of the most adverse features of live-stock market conditions. Meat prices from day to day tend to follow general averages of previous years more closely.

The results of investigations of the marketing of nine lots of cattle through centralized markets show that from 54 to 85 per cent of the gross returns was received by the stockmen, from 2 to 5 per cent was absorbed by marketing expenses, 2 to 9 per cent was received gross by packers, and 8 to 33 per cent by retailers.

The retailers' gross margin, as shown from the results of marketing locally five shipments of cattle, varied from 15 to 38 per cent of the gross returns. From 62 to 84 per cent of the gross returns on these cattle was received by the owner.

INTRODUCTION.

In this report only those phases of the marketing of live stock and meats which bear most directly upon the economic aspects of the meat situation are considered. Not only would a comprehensive treatise, covering the numerous technical matters involved, be inappropriate to the series of reports of which this is one, but available data relative to some of the important problems of marketing and distribution are so fragmentary as to make a detailed or conclusive analysis of such problems impracticable at this time.

The report, therefore, is limited to the setting forth of the results of investigations which recently have been conducted in the Office of Markets and Rural Organization, supplemented by such data from other sources as have been deemed pertinent. The general objects sought in presenting the subject are to define and differentiate the principal methods by which live stock is marketed in the United States; to show the present relative importance of the several methods in the country at large and in the different States and agricultural regions; to analyze the more prominent items of cost involved in the various stages of the marketing of live stock and distribution of meats, with special reference to the reduction of cost through improvements in marketing methods and facilities; and to compare the margins or relative returns realized by each of the important

classes of interests that participate in the movement of meat products from producers to consumers. The kinds of meat animals considered in the report are cattle, hogs, and sheep.

METHODS OF INVESTIGATION.

The sources of the data of which this report is a summary consist of schedules of questions which were sent to extensive lists of persons and organizations identified with different phases of live-stock marketing and meat distribution; detailed reports relative to typical lots of animals which were traced through the various steps of marketing and distribution from the producer to the consumer; and other investigations conducted in person or by correspondence to supplement and confirm certain phases of the information otherwise obtained. A public hearing and conference relative to the marketing of live stock, the distribution of meats, and related matters, which was held at Chicago November 15 and 16, 1915, by direction of the Secretary of Agriculture, and conducted by the Chief of the Office of Markets and Rural Organization, in which many of the most prominent representatives of interests engaged in all departments of marketing and distribution participated, also has provided information concerning some of the topics treated herein.[1]

Acknowledgment is due the Bureau of Crop Estimates of the United States Department of Agriculture for the distribution of schedules to its special live stock and price reporters, and assistance in the compilation of statistics obtained by that means; to the Bureau of Animal Industry for assistance in obtaining data on the slaughter and distribution of selected lots of cattle which were handled at packing plants under Federal inspection; to numerous interests and individuals who furnished information relative to animals and meats involved in the investigations; and to others who responded to inquiries concerning various phases of the subject.[2]

OUTLINE OF THE VARIOUS METHODS OF MARKETING.

Three general methods of marketing are open to producers of meat animals; namely, through the large public stock yards and packing centers; by means of local butchers and packers; and the trade in farm-prepared meats.

Shipments sent to large live stock markets and packing centers are consigned either in carload or in trainload lots to commission firms or packers by individual farmers and stockmen who produce and fatten the animals; they may be consigned similarly by local stock dealers or professional shippers who buy them from farmers and stockmen and act as middlemen between them and the commission firms or packers; they may be consigned by cooperative live stock shipping associations which are organized for the purpose of making distant markets accessible to farmers who have stock to sell in less than carload lots; or they may be sold at local shipping points, either by farmers and stockmen or through regular dealers, to agents

[1] See Sixty-fourth Congress, first session, House of Representatives, Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats and Related Matters. 1916.

[2] Mr. Gilbert Gusler compiled most of the statistics from which the plates in the section "Live Stock and Meat Prices Based on Market Quotations," were made, and Mr. Wallace V. Smith has assisted materially in connection with the preparation of the entire manuscript for publication.

of the packers who ship them to the packing houses which they represent.

Animals which are sold on foot locally other than for shipment to central markets and packing points may be marketed either through local butchers for retail market trade or to local packers who conduct a wholesale slaughtering and meat-packing business. The sale of animals for shipment to feeding points will not be considered specifically in this report, as such disposal is related only indirectly to their final marketing and distribution.

Farm-slaughtered animals, other than those used for home meat supply, generally are marketed either in the carcass or in the form of farm-cured meats and meat products. Dressed carcasses of this kind usually are sold to local retail meat markets or consigned to produce commission houses or special customers. Farm-cured meats, consisting chiefly of hams and bacon, and meat products such as sausage and lard are sold principally to local grocers and meat markets, and to a small extent are delivered directly to consumers, including those sent by parcel post and express.

RELATIVE EXTENT AND IMPORTANCE OF DIFFERENT MARKETING METHODS.

To determine approximately the extent to which each of the principal methods of marketing is practiced throughout the United States, and to secure comprehensive information relative to various problems involved in the subject, a schedule of questions was sent to the special live stock and price reporters of the Bureau of Crop Estimates, including 11,110 correspondents, located in every county in the United States. These correspondents as a class are in a position to know the agricultural conditions of their localities and are experienced in furnishing reports and estimates relative thereto. Considering the minor position of meat production in many places and the limited degree of attention which farmers and stockmen in most parts of the country have given to live stock marketing conditions, a comparatively small percentage of replies to the inquiry was anticipated. The total of 2,072 schedules returned, equal to 18.6 per cent of all correspondents addressed, constitutes a creditable proportion of responses from the sections in which live stock production is a prominent industry, and relatively satisfactory returns from other parts of the country. The replies have been tabulated and summarized by subjects and will be presented in connection with the respective sections of the report to which they pertain.

Tables 1 and 2 reveal marked variations in the relative importance of the methods of marketing which prevail in different States, but it should be noted that in some instances such variations are likely to be magnified by reason of the small number of estimates on which the averages are based. With some such exceptions, however, particularly as to certain of the smaller States where live stock production is of minor importance, the figures are believed to be at least approximately representative of the extent to which each of the methods of marketing is followed in the various States.

The average estimated percentages of cattle, veal calves, hogs, and sheep marketed in each manner are presented by States in Table 1.

TABLE 1.—*Relative importance of the various methods of marketing live stock, by States.*

[Averages of estimates by special live stock and price reporters, expressed as percentages.]

CATTLE.

State.	Number of estimates.	Shipped in carload lots by owners.	Shipped by cooperative shipping associations.	Sold to regular local dealers for shipment to market.	Sold to local packers.	Sold to packers' agents for shipment.	Sold for shipment to feeding points.	Sold to local butchers for retail-market trade.	Farm-slaughtered and sold in the carcass.	Farm-cured meats, sausage, etc.	Other methods.
Alabama	10	5.5	.....	42.0	.....	.....	3.5	34.0	5.0	10.0	.....
Arizona	5	10.0	.....	29.0	.....	.....	56.0	4.0	1.0	.....	.....
Arkansas	41	8.2	4.6	53.2	1.7	.....	9.5	16.9	4.7	1.1	0.1
California	17	14.5	4.7	12.2	7.4	25.0	1.6	32.2	2.4	.....	.....
Colorado	18	48.8	1.1	28.6	.8	.....	10.6	5.6	2.0	2.1	.4
Connecticut	6	.....	.....	14.1	8.4	.....	.....	65.8	11.7	.....	.....
Delaware	2	.....	.....	2.5	.....	.....	.....	87.5	.....	5.0	5.0
Florida	22	4.7	.....	23.0	5.2	2.3	2.2	51.6	11.0	.....	.....
Georgia	30	4.8	.....	23.8	3.9	2.7	2.9	51.7	6.7	1.9	1.6
Idaho	17	26.2	5.0	25.0	15.3	8.2	5.5	10.3	4.2	.3	.....
Illinois	100	33.4	1.3	54.2	1.3	.7	1.4	6.6	.6	.4	.1
Indiana	92	14.8	5.3	61.8	4.4	.5	1.0	9.0	1.0	1.3	.9
Iowa	95	43.9	5.3	39.7	1.8	1.6	3.4	3.5	.5	.3	.....
Kansas	124	42.7	4.1	42.8	.9	.3	3.2	3.9	1.1	.6	.4
Kentucky	66	6.2	1.2	69.8	2.5	1.1	8.8	7.8	1.6	.3	.7
Louisiana	8	18.1	.....	20.0	.....	.3	10.6	46.8	3.9	.3	.....
Maine	19	.....	.....	31.3	2.8	.5	.....	52.2	12.3	.4	.5
Maryland	11	2.9	.....	58.1	.....	.....	.....	34.3	2.0	.....	2.7
Massachusetts	17	.....	.....	38.7	.8	6.6	.7	42.6	7.4	.3	2.9
Michigan	44	9.3	1.4	54.7	1.4	.5	2.3	23.0	6.3	1.1	.....
Minnesota	43	11.4	23.5	48.0	1.2	1.2	.9	9.7	2.6	.7	.8
Mississippi	16	3.6	4.7	56.8	.....	.....	3.9	22.0	8.1	.9	.....
Missouri	68	23.0	1.6	60.3	.2	1.1	7.4	3.8	1.8	.3	.5
Montana	6	37.2	.....	15.0	1.3	.....	.3	41.8	3.2	1.2	.....
Nebraska	112	61.0	6.9	24.9	.1	.5	2.1	3.3	.5	.4	.3
Nevada	8	6.3	.....	26.0	16.9	14.4	8.1	20.0	4.9	.....	3.4
New Hampshire	5	.....	.....	54.0	.....	.....	.....	33.0	13.0	.....	.....
New Jersey	4	.....	.....	38.8	.....	.....	.....	56.2	5.0	.....	.....
New Mexico	9	21.1	.....	21.1	5.7	.....	47.6	2.4	1.0	1.1	.....
New York	30	2.6	.....	62.3	1.0	.5	1.5	24.1	7.3	.5	.2
North Carolina	26	6.9	.....	28.5	.....	.4	9.6	41.7	11.7	1.2	.....
North Dakota	52	24.8	3.0	48.6	.2	2.0	1.5	15.8	3.0	1.0	.....
Ohio	67	5.6	1.8	62.9	4.2	1.4	1.5	18.5	2.8	1.2	.1
Oklahoma	34	27.7	3.1	54.5	.1	.1	2.4	9.7	1.0	1.4	.....
Oregon	10	17.5	.....	23.5	5.0	6.5	9.7	26.8	9.0	1.0	1.0
Pennsylvania	43	1.2	.1	34.3	4.1	4.1	.....	45.5	6.7	2.2	1.8
Rhode Island	4	.....	.....	28.8	.....	.....	.....	65.0	6.2	.....	.....
South Carolina	12	7.5	.....	17.5	.....	.4	1.7	65.0	7.5	.....	.4
South Dakota	46	26.4	9.4	50.0	.8	.8	6.4	5.1	.5	.4	.2
Tennessee	32	5.1	1.7	59.2	.5	.8	12.1	13.3	3.1	3.3	.9
Texas	52	39.0	.....	31.8	.5	.5	12.9	12.5	1.4	1.0	.4
Utah	12	15.5	.....	32.5	2.5	11.7	15.4	20.7	1.7	.....	.....
Vermont	8	.....	.....	70.0	.....	.....	1.9	22.4	3.6	1.8	.3
Virginia	30	4.8	.3	50.1	.....	4.7	17.8	19.9	2.0	.1	.3
Washington	23	5.7	2.1	14.2	5.9	4.6	.5	59.2	7.8	.....	.....
West Virginia	35	1.4	2.9	57.9	.....	.4	7.8	23.8	4.5	.9	.4
Wisconsin	32	7.9	8.9	61.2	2.5	.....	1.3	13.2	3.2	1.3	.5
Wyoming	11	78.5	.....	2.3	.....	.....	1.7	6.3	10.2	.1	.9

VEAL CALVES.

Alabama	4	.....	.....	33.7	.....	.....	.....	66.3	.....	.....	.....
Arizona	1	.....	.....	.....	.....	.....	.....	100.0	.....	.....	.....
Arkansas	21	9.1	5.6	42.8	0.5	.....	3.0	27.9	3.2	.....	7.9
California	15	1.7	5.3	12.0	2.0	11.0	9.0	36.3	22.7	.....	.....
Colorado	8	1.2	.....	40.0	6.3	.....	.6	38.1	13.8	.....	.....
Connecticut	6	.....	.....	29.1	8.3	.....	.....	59.2	3.4	.....	.....
Delaware	3	.....	.....	38.3	.....	.....	.....	35.0	.....	.....	26.7
Florida	8	.....	.....	1.2	.....	.....	.....	88.8	10.0	.....	.....
Georgia	12	.....	.....	11.3	2.9	.....	1.3	64.6	19.5	.....	.4
Idaho	6	.....	.....	17.5	16.7	.....	.....	64.0	1.8	.....	.....
Illinois	72	12.5	1.0	61.8	2.5	.5	1.3	14.7	5.4	.....	.3
Indiana	79	8.5	5.9	63.5	3.5	.3	2.2	9.6	4.7	.....	1.8
Iowa	51	10.6	6.2	44.2	4.2	.7	.5	31.2	2.3	.....	.1
Kansas	70	19.5	3.5	63.3	2.1	.1	1.6	8.9	.9	.....	.1
Kentucky	40	11.9	1.3	70.0	3.9	.9	.5	9.5	.2	.....	1.8
Louisiana	5	23.0	.....	36.0	2.0	.4	.....	34.6	4.0	.....	.....
Maine	18	.....	.....	35.6	3.1	1.1	.....	40.8	19.4	.....	.....
Maryland	11	1.8	.....	56.8	.....	.....	.....	37.3	.5	.....	3.6

TABLE 1.—*Relative importance of the various methods of marketing live stock, by States*—Continued.

VEAL CALVES—Continued.

State.	Number of estimates.	Shipped in carload lots by owners.	Shipped by cooperative shipping associations.	Sold to regular local dealers for shipment to market.	Sold to local packers.	Sold to packers' agents for shipment.	Sold for shipment to feeding points.	Sold to local butchers for retail-market trade.	Farm-slaughtered and sold in the carcass.	Farm-cured meats, sausage, etc.	Other methods.
Massachusetts	17	.....	.....	39.3	.....	.....	.....	45.1	15.6	.....	.....
Michigan	36	2.1	.....	57.1	.8	.3	1.7	26.5	11.5	.....	.....
Minnesota	35	5.7	14.3	37.8	.6	.1	.....	35.5	4.9	.....	1.1
Mississippi	6	.....	.....	46.7	.....	.....	.....	50.8	2.5	.....	.....
Missouri	44	6.8	2.4	78.1	.6	.5	1.3	7.3	1.5	.....	1.5
Montana	3	.....	.....	.....	33.4	.....	.....	25.0	33.3	.....	8.3
Nebraska	54	39.4	13.0	32.8	.2	.....	.6	11.2	1.1	.....	1.7
Nevada	6	.8	.....	13.3	10.8	3.3	.....	51.8	18.3	.....	1.7
New Hampshire	3	.....	.....	60.0	.....	.....	.....	31.0	9.0	.....	.....
New Jersey	5	.....	.....	23.0	.....	.....	.....	66.0	11.0	.....	.....
New Mexico	4	2.4	.....	.....	.....	.....	33.8	51.3	12.5	.....	.....
New York	30	.....	.....	62.9	.2	.....	.3	30.8	5.5	.....	.3
North Carolina	11	.....	.....	59.0	.....	.....	1.8	28.3	10.9	.....	.....
North Dakota	27	12.2	.....	27.4	1.9	.4	.....	53.6	4.3	.....	.2
Ohio	60	1.7	1.8	54.6	4.0	.3	.5	30.6	6.4	.....	.1
Oklahoma	18	24.6	6.1	47.2	.....	.....	3.9	15.1	3.1	.....	.....
Oregon	7	5.0	.....	17.9	7.1	4.3	2.9	33.6	27.9	.....	1.3
Pennsylvania	42	.2	.....	32.4	1.9	2.5	.....	55.1	7.3	.....	.6
Rhode Island	4	.....	.....	.....	.....	.....	.....	99.0	1.0	.....	.....
South Carolina	10	12.5	.....	10.6	.....	.....	1.0	69.9	6.0	.....	.....
South Dakota	20	6.8	.5	57.3	2.0	1.9	29.9	1.5	.....	.....	.1
Tennessee	20	2.8	1.0	78.7	.4	.....	.....	13.9	2.2	.....	1.0
Texas	33	34.7	.....	36.5	1.2	.7	12.6	11.7	2.6	.....	.....
Utah	4	.....	.....	.....	25.0	.....	.....	27.5	47.5	.....	.....
Vermont	7	.....	.....	78.6	.....	.....	.....	11.4	9.3	.....	.7
Virginia	22	1.8	.....	43.6	.9	8.1	.2	36.9	8.5	.....	.....
Washington	21	5.0	.....	27.0	1.0	3.6	1.2	44.0	18.2	.....	.....
West Virginia	22	.....	.....	65.0	.....	.....	5.0	28.0	1.6	.....	.4
Wisconsin	26	5.4	10.8	54.2	2.0	.....	.....	13.7	13.8	.....	.1
Wyoming	5	58.0	.....	.....	.....	.....	1.6	40.4	.....	.....	.....

HOGS.

Alabama	8	6.2	.....	14.4	.....	.....	0.6	28.1	13.8	36.9	.....
Arizona	1	.....	.....	.....	.....	.....	.....	100.0	.....	.....	.....
Arkansas	34	9.0	3.2	38.2	1.5	.....	6.5	20.4	6.1	15.1	.....
California	15	7.7	5.3	35.8	6.7	16.0	1.3	24.9	1.3	.7	0.3
Colorado	16	27.6	5.6	35.6	3.4	1.6	.9	15.8	2.9	6.6	.....
Connecticut	6	.....	.....	10.0	8.3	.....	.....	61.7	20.0	.....	.....
Delaware	3	.....	.....	18.3	.....	.....	.....	45.0	16.7	20.0	.....
Florida	20	3.1	.....	8.3	8.0	.8	1.5	38.5	23.0	16.8	.....
Georgia	18	2.3	.....	5.0	2.8	.....	.....	31.7	27.3	30.9	.....
Idaho	18	10.3	14.2	35.7	10.6	14.8	.....	8.2	4.7	1.5	.....
Illinois	99	24.3	.2	65.0	1.9	.6	.7	4.9	.8	1.5	.1
Indiana	88	14.8	5.7	63.2	4.0	.7	.6	6.1	1.4	3.0	.5
Iowa	96	22.4	5.4	60.4	3.8	3.3	.1	2.7	.6	1.1	.2
Kansas	116	22.8	6.0	60.6	1.9	.2	.7	4.2	1.2	2.3	.1
Kentucky	62	5.1	1.0	62.9	3.3	2.0	1.5	6.3	5.5	12.0	.4
Louisiana	5	19.0	.....	2.0	.....	10.0	.4	63.2	5.0	.4	.....
Maine	17	.....	.....	21.5	4.4	2.9	.....	42.7	25.3	3.2	.....
Maryland	10	1.5	.....	37.2	.....	.....	.....	37.3	9.0	7.5	7.5
Massachusetts	17	.....	.....	23.8	3.9	.....	.....	47.6	22.8	1.9	.....
Michigan	42	9.0	.....	58.5	1.0	.3	.8	20.5	7.9	2.0	.....
Minnesota	41	11.1	24.0	48.2	.5	1.6	.....	12.1	1.3	.8	.4
Mississippi	12	7.6	.....	18.4	.....	.....	.1	32.9	9.3	31.7	.....
Missouri	62	15.6	1.9	69.3	.6	.1	2.6	4.6	1.9	3.4	.....
Montana	5	8.0	.....	16.0	2.0	20.0	.....	14.0	32.4	2.6	5.0
Nebraska	109	35.1	13.9	44.6	1.9	.....	.....	3.2	.4	.7	.2
Nevada	7	4.2	.....	23.6	19.3	6.4	.....	33.6	12.9	.....	.....
New Hampshire	2	.....	.....	17.5	.....	.....	.....	37.5	17.5	27.5	.....
New Jersey	5	.....	.....	14.0	.....	.....	.....	62.0	11.0	13.0	.....
New Mexico	6	13.3	.....	3.3	26.7	.....	.....	35.9	10.8	10.0	.....
New York	31	.....	.....	46.4	.3	.....	2.6	29.8	15.3	5.6	.....
North Carolina	22	5.9	.....	14.5	1.8	.....	.....	29.6	24.6	23.6	.....
North Dakota	51	14.8	3.7	58.4	1.5	.4	1.3	14.2	3.4	2.3	.....
Ohio	66	4.9	3.2	68.2	3.6	.7	.3	11.8	4.6	2.7	.....
Oklahoma	34	14.2	3.6	61.7	.1	.3	1.0	12.2	2.4	4.5	.....
Oregon	9	2.2	5.6	28.3	14.4	5.0	.....	21.7	15.0	6.1	1.7
Pennsylvania	43	.5	.1	22.7	6.8	2.2	.5	39.3	16.6	10.4	.9

TABLE 1.—*Relative importance of the various methods of marketing live stock, by States*—Continued.

HOGS—Continued.

State.	Number of estimates.	Shipped in carload lots by owners.	Shipped by cooperative shipping associations.	Sold to regular local dealers for shipment to market.	Sold to local packers.	Sold to packers' agents for shipment.	Sold for shipment to feeding points.	Sold to local butchers for retail-market trade.	Farm-slaughtered and sold in the carcass.	Farm-cured meats, sausage, etc.	Other methods.
Rhode Island	4	.....	.....	5.0	.....	.....	.....	48.8	25.0	21.2	.....
South Carolina	11	5.6	.....	4.5	.....	.5	.....	60.0	18.4	11.0	.....
South Dakota	45	13.2	8.0	61.7	3.3	1.8	.8	8.0	1.0	2.0	.2
Tennessee	29	5.0	.9	51.8	4.0	.8	1.8	12.8	11.9	10.8	.2
Texas	43	23.4	.....	29.0	.7	1.2	1.4	12.8	7.7	23.7	.1
Utah	9	3.9	.....	20.6	1.0	1.6	2.2	24.5	32.9	13.3	.....
Vermont	7	.....	.....	42.9	.....	.....	.....	18.6	33.6	4.3	.6
Virginia	30	1.7	.....	35.8	2.4	.8	1.8	22.5	12.7	22.3	.....
Washington	22	6.5	1.4	22.4	6.0	3.4	.....	34.8	24.3	1.2	.....
West Virginia	27	.....	.....	52.5	.....	.....	1.0	26.0	10.6	9.6	.3
Wisconsin	31	4.6	10.8	59.0	5.0	.3	.....	12.5	5.7	2.1	.....
Wyoming	9	57.2	.....	6.4	.....	.....	12.6	3.8	18.6	1.4	.....

SHEEP.

Alabama	5	.....	.....	44.0	.....	.....	11.0	21.0	24.0	.....	.....
Arizona	3	27.7	.....	16.6	.....	11.0	44.7	.....	.....	.....	.....
Arkansas	24	10.0	4.4	47.9	1.0	.....	4.3	25.0	7.1	.....	.3
California	31	19.8	6.9	32.2	11.5	17.7	.....	11.8	.1	.....	.....
Colorado	12	65.8	.....	5.8	1.3	.....	23.8	2.6	.7	.....	.....
Connecticut	5	.....	.....	20.0	10.0	.....	.....	54.0	16.0	.....	.....
Delaware	3	.....	.....	18.3	.....	.....	.....	78.4	.....	.....	3.3
Florida	4	.....	.....	.....	22.5	.....	5.0	57.5	15.0	.....	.....
Georgia	10	2.0	.....	28.0	3.0	.....	3.0	51.5	11.5	.....	1.0
Idaho	12	55.5	.....	7.1	17.1	11.7	2.3	5.8	.5	.....	.....
Illinois	70	35.9	.2	55.1	1.6	.6	.1	5.8	.5	.....	.2
Indiana	79	14.8	6.1	71.8	2.0	.3	.2	3.1	.9	.....	.8
Iowa	66	47.5	4.1	40.3	3.5	.5	.3	2.6	1.1	.....	.1
Kansas	46	61.2	.7	30.9	2.8	.1	.8	2.6	.4	.....	.5
Kentucky	61	3.5	1.3	81.1	1.9	.7	2.5	5.0	1.5	.....	2.5
Louisiana	3	31.6	.....	3.3	.....	.7	.....	63.7	.7	.....	.....
Maine	14	.....	.....	22.5	2.8	.....	.....	64.7	10.0	.....	.....
Maryland	8	2.9	.....	57.8	.....	.....	.....	35.5	.....	.....	3.8
Massachusetts	7	.....	.....	12.9	.....	14.3	.....	60.0	12.8	.....	.....
Michigan	40	13.9	.....	58.9	1.3	.....	.7	20.5	4.7	.....	.....
Minnesota	29	24.7	16.1	46.1	.....	.....	.....	11.7	1.2	.....	.2
Mississippi	8	.....	.....	28.9	.....	.....	.....	64.8	6.3	.....	.....
Missouri	51	15.0	3.6	73.7	.5	.....	1.7	3.4	.9	.....	1.2
Montana	5	70.0	.....	8.4	.....	.....	8.0	10.0	3.6	.....	.....
Nebraska	56	79.7	9.1	7.3	.....	.....	.1	3.3	.1	.....	.4
Nevada	7	46.4	.....	19.7	4.3	9.3	4.3	13.6	2.4	.....	.....
New Hampshire	2	.....	.....	37.5	.....	.....	.....	60.0	2.0	.....	.5
New Jersey	5	.....	.....	12.0	.....	.....	.....	63.0	25.0	.....	.....
New Mexico	7	6.4	.....	22.9	.1	.....	67.2	.7	2.7	.....	.....
New York	24	.5	.....	59.7	.....	.....	.....	35.0	4.8	.....	.....
North Carolina	13	8.5	.....	47.3	.....	.....	3.8	26.2	14.2	.....	.....
North Dakota	27	38.1	.9	42.4	.....	.....	.2	15.1	3.3	.....	.....
Ohio	62	6.3	2.3	74.5	1.5	.3	2.5	10.0	2.4	.....	.2
Oklahoma	7	47.9	14.3	34.3	.....	.....	.....	3.5	.....	.....	.....
Oregon	7	.....	7.1	23.6	18.6	11.4	2.9	18.6	16.4	.....	1.4
Pennsylvania	33	.9	.....	42.1	2.0	2.1	.4	47.0	4.9	.....	.6
Rhode Island	3	.....	.....	.....	.....	.....	.....	98.0	2.0	.....	.....
South Carolina	10	2.5	.....	3.4	.....	.....	.....	71.5	22.6	.....	.....
South Dakota	35	42.6	9.7	36.7	.6	.7	6.9	1.9	.5	.....	.4
Tennessee	28	5.7	5.2	68.6	.4	.....	2.3	10.2	5.5	.....	2.1
Texas	18	30.5	.....	36.7	2.8	.5	7.5	11.2	10.8	.....	.....
Utah	8	25.5	.....	25.6	.....	10.6	.6	24.4	12.0	.....	1.3
Vermont	7	.....	.....	76.5	.....	.....	.....	5.7	17.4	.....	.4
Virginia	29	2.1	.....	68.9	.....	.....	5.0	21.0	3.0	.....	.....
Washington	11	6.8	.....	5.0	6.4	3.6	4.6	55.0	18.6	.....	.....
West Virginia	23	.....	.....	84.2	.....	.....	1.0	12.8	2.0	.....	.....
Wisconsin	23	2.4	10.6	60.9	2.7	3.9	.....	16.9	1.6	.....	1.0
Wyoming	12	85.2	.....	4.2	.....	1.7	7.0	1.8	.1	.....	.....

The limits of this report preclude a detailed discussion of the data pertaining to each State; and so far as characteristic differences in marketing methods follow State lines it must suffice at this point merely to refer the reader to Table 1 for such comparisons as he may wish to make. Moreover, it is considered more pertinent to the present purpose to summarize the data with reference to agricultural and live-stock producing sections. Table 2 represents the results of this phase of the investigation, arranged according to the following sections: New England, the cotton States, corn belt States, and 11 far Western Range States, the latter being subdivided in accordance with the classification adopted by the Forest Service as presented in Part II of this series.[1] Although a number of important States and prominent live-stock producing districts are not included in this grouping, it is possible by reference to Table 1 to ascertain the prevalent methods of marketing in such regions as are omitted from the general subdivisions indicated in Table 2.

TABLE 2.—*Relative importance of the various methods of marketing live stock, by sections.*

[Data from Table 1, for selected groups of States, expressed as percentages.]

CATTLE.

Section.	Number of estimates.	Shipped in carload lots by owners.	Shipped by cooperative shipping associations.	Sold to regular local dealers for shipment to market.	Sold to local packers.	Sold to packers' agents for shipment.	Sold for shipment to feeding points.	Sold to local butchers for retail-market trade.	Farm slaughtered and sold in the carcass.	Farm-cured meats, sausage, etc.	Other methods.
New England States:											
Maine	19	.....	.....	31.3	2.8	0.5	.....	52.2	12.3	0.4	0.5
New Hampshire	5	.....	.....	54.0	.....	.....	.....	33.0	13.0	.....	.....
Vermont	8	.....	.....	70.0	.....	.....	1.9	22.4	3.6	1.8	.3
Massachusetts	17	.....	.....	38.7	.8	6.6	.7	42.6	7.4	.3	2.9
Rhode Island	4	.....	.....	28.8	.....	.....	.....	65.0	6.2	.....	.....
Connecticut	6	.....	.....	14.1	8.4	.....	.....	65.8	11.7	.....	.....
Cotton States:											
North Carolina	26	6.9	.....	28.5	.....	.4	9.6	41.7	11.7	1.2	.....
South Carolina	12	7.5	.....	17.5	.....	.4	1.7	65.0	7.5	.....	.4
Georgia	30	4.8	.....	23.8	3.9	2.7	2.9	51.7	6.7	1.9	1.6
Florida	22	4.7	.....	23.0	5.2	2.3	2.2	51.6	11.0	.....	.....
Tennessee	32	5.1	1.7	59.2	.5	.8	12.1	13.3	3.1	3.3	.9
Alabama	10	5.5	.....	42.0	.....	.....	3.5	34.0	5.0	1.0	.....
Mississippi	16	3.6	4.7	56.8	.....	.....	3.9	22.0	8.1	.9	.....
Arkansas	41	8.2	4.6	53.2	1.7	.....	9.5	16.9	4.7	1.1	.1
Louisiana	8	18.1	.....	20.0	.....	.3	10.6	46.8	3.9	.3	.....
Corn belt States:											
Indiana	92	14.8	5.3	61.8	4.4	.5	1.0	9.0	1.0	1.3	.9
Illinois	100	33.4	1.3	54.2	1.3	.7	1.4	6.6	.6	.4	.1
Iowa	95	43.9	5.3	39.7	1.8	1.6	3.4	3.5	.5	.3	.....
Missouri	68	23.0	1.6	60.3	.2	1.1	7.4	3.8	1.8	.3	.5
Nebraska	112	61.0	6.9	24.9	.1	.5	2.1	3.3	.5	.4	.3
Kansas	124	42.7	4.1	42.8	.9	.3	3.2	3.9	1.1	.6	.4
Western Range States:											
Northwest group—											
Oregon	10	17.5	.....	23.5	5.0	6.5	9.7	26.8	9.0	1.0	1.0
Washington	23	5.7	2.1	14.2	5.9	4.6	.5	59.2	7.8	.....	.....
Montana	6	37.2	.....	15.0	1.3	.....	.3	41.8	3.2	1.2	.....
Idaho	17	26.2	5.0	25.0	15.3	8.2	5.5	10.3	4.2	.3	.....
Utah	12	15.5	.....	32.5	2.5	11.7	15.4	20.7	1.7	.....	.....
Nevada	8	6.3	.....	26.0	16.9	14.4	8.1	20.0	4.9	.....	3.4
Wyoming	11	78.5	.....	2.3	.....	.....	1.7	6.3	10.2	.1	.9
Southwest group—											
Colorado	18	48.8	1.1	28.6	.8	.....	10.6	5.6	2.0	2.1	.4
Arizona	5	10.0	.....	29.0	.....	.....	56.0	4.0	1.0	.....	.....
New Mexico	9	21.1	.....	21.1	5.7	.....	47.6	2.4	1.0	1.1	.....
California	17	14.5	4.7	12.2	7.4	25.0	1.6	32.2	2.4	.....	.....

[1] Barnes, Will C., and Jardine, James T., Meat Situation in the United States, Part II—Live-stock Production in the 11 Far Western Range States. U. S. Dept. of Agriculture, Office of the Secretary, Report 110, 1916.

TABLE 2.—*Relative importance of the various methods of marketing live stock, by sections*—Continued.

VEAL CALVES.

State.	Number of estimates.	Shipped in carload lots by owners.	Shipped by cooperative shipping associations.	Sold to regular local dealers for shipment to market.	Sold to local packers.	Sold to packers' agents for shipment.	Sold for shipment to feeding points.	Sold to local butchers for retail-market trade.	Farm slaughtered and sold in the carcass.	Farm-cured meats, sausage, etc.	Other methods.
New England States:											
Maine	18	.....	.....	35.6	3.1	1.1	.....	40.8	19.4	.....	.....
New Hampshire	3	.....	.....	60.0	.....	.....	.....	31.0	9.0	.....	.....
Vermont	7	.....	.....	78.6	.....	.....	.....	11.4	9.3	.....	0.7
Massachusetts	17	.....	.....	39.3	.....	.....	.....	45.1	15.6	.....	.....
Rhode Island	4	.....	.....	.....	.....	.....	.....	99.0	1.0	.....	.....
Connecticut	6	.....	.....	29.1	8.3	.....	.....	59.2	3.4	.....	.....
Cotton States:											
North Carolina	11	.....	.....	59.0	.....	.....	1.8	28.3	10.9	.....	.....
South Carolina	10	12.5	.....	10.6	.....	.....	1.0	69.9	6.0	.....	.....
Georgia	12	.....	.....	11.3	2.9	.....	1.3	64.6	19.5	.....	.4
Florida	8	.....	.....	1.2	.....	.....	.....	88.8	10.0	.....	.....
Tennessee	20	2.8	1.0	78.7	.4	.....	.....	13.9	2.2	.....	1.0
Alabama	4	.....	.....	33.7	.....	.....	.....	66.3	.....	.....	.....
Mississippi	6	.....	.....	46.7	.....	.....	.....	50.8	2.5	.....	.....
Arkansas	21	9.1	5.6	42.8	.5	.....	3.0	27.9	3.2	.....	7.9
Louisiana	5	23.0	.....	36.0	2.0	.4	.....	34.6	4.0	.....	.....
Corn belt States:											
Indiana	79	8.5	5.9	63.5	3.5	.3	2.2	9.6	4.7	.....	1.8
Illinois	72	12.5	1.0	61.8	2.5	.5	1.3	14.7	5.4	.....	.3
Iowa	51	10.6	6.2	44.2	4.2	.7	.5	31.2	2.3	.....	.1
Missouri	44	6.8	2.4	78.1	.6	.5	1.3	7.3	1.5	.....	1.5
Nebraska	54	39.4	13.0	32.8	.2	.....	.6	11.2	1.1	.....	1.7
Kansas	70	19.5	3.5	63.3	2.1	.1	1.6	8.9	.9	.....	.1
Western Range States:											
Northwest group—											
Oregon	7	5.0	.....	17.9	7.1	4.3	2.9	33.6	27.9	.....	1.3
Washington	21	5.0	.....	27.0	1.0	3.6	1.2	44.0	18.2	.....	.....
Montana	3	.....	.....	.....	33.4	.....	.....	25.0	33.3	.....	8.3
Idaho	6	.....	.....	17.5	16.7	.....	.....	64.0	1.8	.....	.....
Utah	4	.....	.....	.....	25.0	.....	.....	27.5	47.5	.....	.....
Nevada	6	.8	.....	13.3	10.8	3.3	.....	51.8	18.3	.....	1.7
Wyoming	5	58.0	.....	.....	.....	.....	1.6	40.4	.....	.....	.....
Southwest group—											
Colorado	8	1.2	.....	40.0	6.3	.....	.6	38.1	13.8	.....	.....
Arizona	1	.....	.....	.....	.....	.....	.....	100.0	.....	.....	.....
New Mexico	4	2.4	.....	.....	.....	.....	33.8	51.3	12.5	.....	.....
California	15	1.7	5.3	12.0	2.0	11.0	9.0	36.3	22.7	.....	.....

HOGS.

New England States:											
Maine	17	.....	.....	21.5	4.4	2.9	.....	42.7	25.3	3.2	.....
New Hampshire	2	.....	.....	17.5	.....	.....	.....	37.5	17.5	27.5	.....
Vermont	7	.....	.....	42.9	.....	.....	.....	18.6	33.6	4.3	0.6
Massachusetts	17	.....	.....	23.8	3.9	.....	.....	47.6	22.8	1.9	.....
Rhode Island	4	.....	.....	5.0	.....	.....	.....	48.8	25.0	21.2	.....
Connecticut	6	.....	.....	10.0	8.3	.....	.....	61.7	20.0	.....	.....
Cotton States:											
North Carolina	22	5.9	.....	14.5	1.8	.....	.....	29.6	24.6	23.6	.....
South Carolina	11	5.6	.....	4.5	.....	.5	.....	60.0	18.4	11.0	.....
Georgia	18	2.3	.....	5.0	2.8	.....	.....	31.7	27.3	30.9	.....
Florida	20	3.1	.....	8.3	8.0	.8	1.5	38.5	23.0	16.8	.....
Tennessee	29	5.0	0.9	51.8	4.0	.8	1.8	12.8	11.9	10.8	.2
Alabama	8	6.2	.....	14.4	.....	.....	.6	28.1	13.8	36.9	.....
Mississippi	12	7.6	.....	18.4	.....	.....	.1	32.9	9.3	31.7	.....
Arkansas	34	9.0	3.2	38.2	1.5	.....	6.5	20.4	6.1	15.1	.....
Louisiana	5	19.0	.....	2.0	.....	10.0	.4	63.2	5.0	.4	.....
Corn belt States:											
Indiana	88	14.8	5.7	63.2	4.0	.7	.6	6.1	1.4	3.0	.5
Illinois	99	24.3	.2	65.0	1.9	.6	.7	4.9	.8	1.5	.1
Iowa	96	22.4	5.4	60.4	3.8	3.3	.1	2.7	.6	1.1	.2
Missouri	62	15.6	1.9	69.3	.6	.1	2.6	4.6	1.9	3.4	.....
Nebraska	109	35.1	13.9	44.6	1.9	.....	.....	3.2	.4	.7	.2
Kansas	116	22.8	6.0	60.6	1.9	.2	.7	4.2	1.2	2.3	.1

TABLE 2.—*Relative importance of the various methods of marketing live stock, by sections*—Continued.

HOGS—Continued.

State.	Number of estimates.	Shipped in carload lots by owners.	Shipped by cooperative shipping associations.	Sold to regular local dealers for shipment to market.	Sold to local packers.	Sold to packers' agents for shipment.	Sold for shipment to feeding points.	Sold to local butchers for retail-market trade.	Farm-slaughtered and sold in the carcass.	Farm-cured meats, sausage, etc.	Other methods.
Western range States:											
Northwest group—											
Oregon	9	2.2	5.6	28.3	14.4	5.0	.....	21.7	15.0	6.1	1.7
Washington	22	6.5	1.4	22.4	6.0	3.4	.....	34.8	24.3	1.2	.....
Montana	5	8.0	.....	16.0	2.0	20.0	.....	14.0	32.4	2.6	5.0
Idaho	18	10.3	14.2	35.7	10.6	14.8	.....	8.2	4.7	1.5	.....
Utah	9	3.9	.....	20.6	1.0	1.6	2.2	24.5	32.9	13.3	.....
Nevada	7	4.2	.....	23.6	19.3	6.4	.....	33.6	12.9	.....	.....
Wyoming	9	57.2	.....	6.4	.....	.....	12.6	3.8	18.6	1.4	.....
Southwest group—											
Colorado	16	27.6	5.6	35.6	3.4	1.6	.9	15.8	2.9	6.6	.....
Arizona	1	.....	.....	.....	.....	.....	.....	100.0	.....	.....	.....
New Mexico	6	13.3	.....	3.3	26.7	.....	.....	35.9	10.8	10.0	.....
California	15	7.7	5.3	35.8	6.7	16.0	1.3	24.9	1.3	.7	.3

SHEEP.

New England States:											
Maine	14	.....	.....	22.5	2.8	.....	.....	64.7	10.0	.....	.....
New Hampshire	2	.....	.....	37.5	.....	.....	.....	60.0	2.0	.....	0.5
Vermont	7	.....	.....	76.5	.....	.....	.....	5.7	17.4	.....	.4
Massachusetts	7	.....	.....	12.9	.....	14.3	.....	60.0	12.8	.....	.....
Rhode Island	3	.....	.....	.....	.....	.....	.....	98.0	2.0	.....	.....
Connecticut	5	.....	.....	20.0	10.0	.....	.....	54.0	16.0	.....	.....
Cotton States:											
North Carolina	13	8.5	.....	47.3	.....	.....	3.8	26.2	14.2	.....	.....
South Carolina	10	2.5	.....	3.4	.....	.....	.....	71.5	22.6	.....	.....
Georgia	10	2.0	.....	28.0	3.0	.....	3.0	51.5	11.5	.....	1.0
Florida	4	.....	.....	.....	22.5	.....	5.0	57.5	15.0	.....	.....
Tennessee	28	5.7	5.2	68.6	.4	.....	2.3	10.2	5.5	.....	2.1
Alabama	5	.....	.....	44.0	.....	.....	11.0	21.0	24.0	.....	.....
Mississippi	8	.....	.....	28.9	.....	.....	.....	64.8	6.3	.....	.....
Arkansas	24	10.0	4.4	47.9	1.0	.....	4.3	25.0	7.1	.....	.3
Louisiana	3	31.6	.....	3.3	.....	.7	.....	63.7	.7	.....	.....
Corn belt States:											
Indiana	79	14.8	6.1	71.8	2.0	.3	.2	3.1	.9	.....	.8
Illinois	70	35.9	.2	55.1	1.6	.6	.1	5.8	.5	.....	.2
Iowa	66	47.5	4.1	40.3	3.5	.5	.3	2.6	1.1	.....	.1
Missouri	51	15.0	3.6	73.7	.5	.....	1.7	3.4	.9	.....	1.2
Nebraska	56	79.7	9.1	7.3	.....	.....	.1	3.3	.1	.....	.4
Kansas	46	61.2	.7	30.9	2.8	.1	.8	2.6	.4	.....	.5
Western range States:											
Northwest group—											
Oregon	7	.....	7.1	23.6	18.6	11.4	2.9	18.6	16.4	.....	1.4
Washington	11	6.8	.....	5.0	6.4	3.6	4.6	55.0	18.6	.....	.....
Montana	5	70.0	.....	8.4	.....	.....	8.0	10.0	3.6	.....	.....
Idaho	12	55.5	.....	7.1	17.1	11.7	2.3	5.8	.5	.....	.....
Utah	8	25.5	.....	25.6	.....	10.6	.6	24.4	12.0	.....	1.3
Nevada	7	46.4	.....	19.7	4.3	9.3	4.3	13.6	2.4	.....	.....
Wyoming	12	85.2	.....	4.2	.....	1.7	7.0	1.8	.1	.....	.....
Southwest group—											
Colorado	12	65.8	.....	5.8	1.3	.....	23.8	2.6	.7	.....	.....
Arizona	3	27.7	.....	16.6	.....	11.0	44.7	.....	.....	.....	.....
New Mexico	7	6.4	.....	22.9	.1	.....	67.2	.7	2.7	.....	.....
California	31	19.8	6.9	32.2	11.5	17.7	.....	11.8	.1	.....	.....

Although it is impracticable to compute from these data average percentages which would represent the relative importance of each method of marketing in the entire country, owing to diversity in size of the States and the incomparable character of their live stock, nevertheless certain general distinctions which are brought out by the foregoing figures may be noted. With reference to the marketing of

cattle, Table 2 indicates that in the majority of instances, in round numbers, from 40 to 80 per cent of the cattle marketed from the different sections are shipped to the large stockyards and packing centers, and that the percentage of cattle so marketed is least in the extreme eastern, western, and southern portions of the country and greatest in the North Central section; while from 10 to 50 per cent are sold to local butchers and packers and from 5 to 15 per cent are either farm slaughtered or marketed otherwise.

The proportions of veal calves shipped to the centralized markets vary in a general way from 25 to 75 per cent, the lowest percentages occurring in the extreme East and the West, and the highest in the North Central States, as in the case of cattle; about 25 to 50 per cent of the calves in different sections are sold to local retailers or packers and from 2 to 20 per cent as farm-slaughtered veal.

Speaking generally, from 25 to 80 per cent of the hogs marketed are shipped to the centralized markets, 10 to 40 per cent being sold to local retailers and packers, and from 5 to 35 per cent are farm slaughtered and sold in the carcass or as cured meats.

As to the marketing of sheep, the estimates show that from 35 to 90 per cent of the numbers marketed in the different sections are shipped to market, that from 10 to 50 per cent are sold to local butchers and packers, and that from 1 to 10 per cent are sold in the carcass or marketed otherwise. The data relative to sheep and hogs, like those on cattle and calves, also show that the practice of shipping to centralized markets prevails most generally in the Central States and that the greatest prevalence of local marketing is found in the extreme eastern, western, and southern sections. It must be borne in mind that these comparisons represent relative proportions and not actual numbers of arrivals marketed from the various sections.

Similar data from other sources with which to compare the foregoing estimates are not available, but the following citations pertaining to previous years are significant in this connection. The numbers of animals of different kinds slaughtered for food in 1909 and the percentages of each kind handled in slaughtering and meat-packing establishments, in retail houses, and on farms, respectively, were reported by the Bureau of the Census, as shown in Table 3.

TABLE 3.—*Animals slaughtered for food in the United States, 1909.*[1]

Class of animals.	Total number.	In slaughtering and meat-packing establishments.	In retail slaughter-houses.	On farms.
		Per cent.	*Per cent.*	*Per cent.*
Beeves	13,611,422	59.7	30.0	10.3
Calves	6,515,976	38.4	44.2	17.4
Sheep and lambs	14,724,699	83.2	13.2	3.6
Hogs	53,219,668	63.6	7.5	28.9
Goats and kids	285,553	11.6	46.7	41.7

[1] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910, Manufactures 1909. Statistics for the Slaughtering and Meat Packing Industry, p. 14.

Numbers of cattle slaughtered at large centers, in small cities, and towns, and on farms and ranges, respectively, were estimated

from figures given by the United States Bureau of Corporations as follows for the year 1903:

TABLE 4.—*Cattle slaughtered in the United States, 1903.*[1]

	Per cent.
Cities over 50,000 population	58
Cities and towns under 50,000 population	27
Farms and ranges	11
Export	4
Total	100

The percentage of slaughtering done in large slaughterhouses in 1900 was estimated by the Bureau of Statistics, United States Department of Agriculture, as follows:

TABLE 5.—*Animals slaughtered in wholesale slaughtering establishments, 1900.*[2]

	Per cent.
Cattle, excepting calves	41.05
Sheep, including lambs	33.85
Swine	56.91

Summing up the foregoing data relative to the three general classes of markets through which live stock is sold, it appears from the investigation herein reported that there is wide variation between one agricultural and live-stock producing section and another with respect to marketing methods, shipment to the centralized markets being practiced most generally in the Central States, and the local utilization of meat animals being most common in the East and South, while selling to packers or dealers at shipping points is characteristic of large sections in the West.

From the reports of the Census Bureau and from other data representing the country at large, it is estimated that about one-half the beef cattle, two-thirds of the hogs, and four-fifths of the sheep and lambs marketed in the United States pass through the large central markets; that about one-third of the cattle, one-twelfth of the hogs, and one-eighth of the sheep and lambs are sold for local slaughter; and that about one-tenth of the beef cattle, one-third of the hogs, and but 3 or 4 per cent of the sheep and lambs are slaughtered on farms and ranges. Considering that the animals which are shipped to the centralized markets generally are of heavier weights and of higher grades than stock slaughtered locally, it is apparent that much more than half—probably two-thirds or more—of the beef, mutton, and pork consumed is the product of animals which pass through the large centralized markets.

FACTORS IN THE COST OF MARKETING AND DISTRIBUTION.

An analysis of the economic problems of marketing in their bearing on the meat situation involves a systematic consideration of the instrumentalities and operations which enter into the cost of transporting, handling, and selling meat animals, from the producer to the slaughterer, and the manufacture of meat and by-products and their distribution through wholesale and retail channels to the consumer. Available data pertaining to particular phases of live-stock

[1] U. S. Commissioner of Corporations, Report on the Beef Industry, 1905, pp. 54-56.
[2] Holmes, George K., Meat Supply and Surplus. U. S. Dept. of Agriculture, Bureau of Statistics Bulletin No. 55, 1907, p. 69.

marketing and meat distribution may be presented most effectively under the general topics (1) marketing through centralized markets and (2) local marketing and distribution. In connection with the former, the principal subjects to be considered are the shipment of stock to market; facilities, service, and charges at the prominent public live-stock markets; and the distribution of meats through the large packing centers. Factors in local marketing will be treated under the general heads of retail meat markets, municipal abattoirs, local packing plants, and farm-slaughtered meats.

MARKETING THROUGH CENTRALIZED MARKETS AND PACKING POINTS.

In this section of the report the subjects to be treated are the shipment of meat animals, the facilities and service at the large public stock markets, and the wholesale packing and distribution of meats.

Shipment of Live Stock to Market.

The time of year at which cattle, hogs, and sheep are put into the feed lot or placed upon grass has an important relation to the time at which they can be marketed. A summary of estimates furnished by special live-stock and price reporters of the Bureau of Crop Estimates affords a comparison of the different seasons with respect to the numbers of animals bought for grazing and feeding purposes. The accompanying data (Table 6) show the estimated percentages of cattle and sheep bought by stockmen and farmers in each season, while Table 8 represents the percentages of meat animals marketed during different periods of the year. Although these percentages are merely simple averages of the estimates as summarized by States (see Tables 7 and 9), and while the calculation of true weighted averages from available data is impossible, nevertheless the tables are an approximate indication of the extent of the seasonal variations in question.

Table 6.—*Estimated percentages of stockers and feeders bought in various seasons.*

Class of animals.	Fall.	Spring.	Summer.	Winter.	Fall and winter.	Fall and spring.	Fall and summer.	Winter and spring.	Spring and summer.
Cattle.....	56	15	3	3	8	7	5	2	1
Sheep.....	46	25	8	1	11	4	5	.....	.....

A marked tendency toward fall buying of feeding and grazing stock is shown by the figures, which indicate that approximately two-thirds of the cattle and sheep that are purchased as stockers and feeders are bought during the fall months. Moreover, the concentration of buying is much more marked than the figures in Table 6 suggest, for the principal feeding districts are the areas in which fall buying is the most prevalent. The figures used in compiling these averages show that approximately 60 per cent of the stocker and feeder cattle of the corn belt are bought in the fall months. Figures for the corn-belt States, with those for the two sheep-feeding States of Michigan and Ohio added, show that 65 per cent of the stocker and feeder sheep are bought in the fall. The schedules further show that the stockmen of these areas buy 47 per cent of their feed-lot supplies at the centralized markets.

TABLE 7.—*Estimated percentages of stocker and feeder cattle and sheep bought in the various seasons of the year.*

State.	Cattle.									Sheep.						
	Fall.	Winter.	Spring.	Summer.	Fall and winter.	Fall and spring.	Fall and summer.	Winter and spring.	Spring and summer.	Fall.	Winter.	Spring.	Summer.	Fall and winter.	Fall and spring.	Fall and summer.
Alabama																
Arizona																
Arkansas	37.5	12.5	25.0		12.5			12.5				33.3		66.7		
California	25.0					25.0	50.0					66.7				33.3
Colorado																
Connecticut																
Delaware																
Florida																
Georgia	28.6		14.3		14.3	28.5		14.3								
Idaho																
Illinois	56.3	10.0	8.2		2.3	10.0	6.2	2.3	4.7	61.7		22.9		7.7	7.7	
Indiana	65.1		7.0	11.6	7.0	7.0	2.3			64.3		7.1		21.5	7.1	
Iowa	55.8		5.9		5.9	26.5		5.9		71.5					28.5	
Kansas	65.3	5.3	6.7	2.7	9.3	6.7	2.7		1.3	66.7		16.6		16.7		
Kentucky	54.9	6.4	12.9		9.7	3.2	9.7		3.2	11.1		44.5	38.9		5.5	
Louisiana																
Maine																
Maryland	66.7		33.3													
Massachusetts																
Michigan	58.4	8.3	16.7	8.3		8.3				71.5		14.3	14.2			
Minnesota	57.9	5.2	31.6		5.3					40.0		20.0		20.0		20.0
Mississippi	62.5	12.5	12.5						12.5							
Missouri	40.8		11.1	22.2	7.4	3.7	14.8			20.0		60.0	20.0			
Montana																
Nebraska	67.4	2.0	2.0	4.0	12.3	4.1	8.2			100.0						
Nevada																
New Hampshire			50.0		50.0											
New Jersey																
New Mexico																
New York	80.0							20.0								
North Carolina	75.0		12.5				12.5									
North Dakota																
Ohio	79.2		4.1	4.1	8.4	4.2				72.8		18.2		9.0		
Oklahoma	66.7	11.1			16.7	5.5										
Oregon																
Pennsylvania	72.8		18.2		9.0											
Rhode Island																
South Carolina																
South Dakota	61.2		27.8				5.5		5.5							
Tennessee	66.7		20.0	6.6				6.7		33.4		16.6	50.0			
Texas	51.8	10.3	13.7		6.9	17.3				16.7	16.6	50.0			16.7	
Utah																
Vermont																
Virginia	91.7				8.3											
Washington																
West Virginia	37.5		12.5	12.5		12.5	25.0			80.0						20.0
Wisconsin	35.8		35.7	7.1	21.4					33.4		33.3		33.3		
Wyoming																

By referring to the average estimates by States (Table 7), it is seen that the extent of fall buying of stocker and feeder cattle varies considerably among the different States, the minimum being 25 per cent in California and the maximum 91.7 per cent in Virginia. Nevertheless all the States are shown as buying more feeding and grazing cattle in the fall than in any other season. All of the States, with the exception of Kentucky, Missouri, Tennessee, and Texas, also buy a larger percentage of their stocker and feeder sheep and lambs in the fall than in any other one season. Of the States named all but Tennessee, which buys chiefly in the summer, purchase their thin sheep and lambs in the spring.

Table 8 shows the percentages of animals sold in various seasons as condensed from Table 9. The figures here shown as representative

of the live-stock movements of the United States as a whole, although computed from estimates by States without reference to the extent of the industry in each, are considered a general indication of seasonal marketing tendencies. This conclusion has been strengthened because of the correlation between the data of Table 8 and the actual seasonal receipts in 1915 at 39 live-stock markets located in all sections of the United States, reports from which have been summarized in this office.

TABLE 8.—*Estimated percentages of animals sold in various seasons.*

Class of animals.	Fall.	Winter.	Spring.	Summer.	All seasons.
Cattle	41	18	20	17	4
Hogs	32	38	16	4	10
Sheep	42	13	18	26	1

TABLE 9.—*Estimated percentages of animals of different kinds marketed in the various seasons of the year.*

State.	Cattle.					Hogs.					Sheep.					Horses and mules.				
	Fall.	Winter.	Spring.	Summer.	Year round.	Fall.	Winter.	Spring.	Summer.	Year round.	Fall.	Winter.	Spring.	Summer.	Year round.	Fall.	Winter.	Spring.	Summer.	Year round.
Ala.	37.2	37.2	16.3	7.0	2.3	26.7	40.0	33.3	....	....	36.4	27.3	36.3	....	....	21.4	21.4	50.0	....	7.2
Ariz.	66.7	....	6.6	26.7	....	....	....	....	....	100.0	50.0	....	....	50.0	....	....	....	....	....	....
Ark.	47.3	14.0	12.7	23.3	2.7	35.0	42.0	12.0	7.0	4.0	55.3	7.9	10.5	26.3	....	25.5	29.1	27.3	3.6	14.5
Cal.	32.8	6.9	17.2	37.9	5.2	46.2	....	15.4	19.2	19.2	25.0	15.0	20.0	30.0	10.0	....	....	....	37.5	62.5
Colo.	47.8	21.8	23.2	7.2	....	26.5	32.4	17.6	....	23.5	43.6	15.4	41.0	....	....	15.8	....	42.1	....	42.1
Conn.	37.5	62.5	....	....	....	66.7	20.0	13.3	....	....	100.0	....	....	....	....	....	....	100.0	....	....
Del.	42.8	42.9	....	....	14.3	37.5	50.0	12.5	....	....	46.1	23.1	7.7	23.1	....	....	50.0	50.0	....	....
Fla.	25.8	14.5	21.0	29.0	9.7	25.5	51.1	10.6	....	12.8	7.7	23.1	7.7	46.1	15.4	42.9	42.9	7.1	....	7.1
Ga.	32.2	13.9	22.6	27.8	3.5	35.1	45.4	17.5	1.0	1.0	14.3	....	19.0	52.4	14.3	40.0	33.3	26.7	....	....
Idaho.	60.0	17.8	11.1	11.1	....	37.1	22.2	25.9	....	14.8	54.3	....	20.0	25.7	....	....	....	50.0	8.3	41.7
Ill.	21.4	22.6	29.7	23.6	2.7	19.4	40.5	19.8	6.3	14.0	13.9	18.3	33.0	32.2	2.6	20.1	31.9	32.0	4.9	11.1
Ind.	26.9	14.5	27.0	31.2	.4	24.5	29.5	11.7	19.0	15.3	42.3	12.8	14.1	27.5	3.3	7.5	25.0	52.5	4.2	10.8
Iowa.	19.9	28.9	30.9	18.8	1.5	11.4	44.1	21.2	5.7	17.6	34.9	27.3	25.7	12.1	....	7.4	38.5	34.8	8.2	11.1
Kans.	35.4	26.3	23.7	14.6	....	18.2	36.7	21.3	4.2	19.6	28.2	31.1	29.1	11.6	....	19.0	35.0	36.7	.4	8.9
Ky.	44.5	12.0	16.2	26.4	.9	32.4	28.2	11.3	18.3	9.8	15.5	1.0	3.9	79.6	....	28.0	23.7	44.1	.8	3.4
La.	12.5	6.2	56.3	12.5	12.5	....	75.0	....	....	25.0	30.0	10.0	30.0	30.0	....	....	....	....	....	....
Me.	46.8	19.1	27.7	4.3	2.1	54.2	8.3	37.5	....	....	50.0	4.5	13.7	31.8	....	....	....	....	....	....
Md.	6.7	6.7	53.3	20.0	13.3	29.2	33.3	29.2	....	8.3	18.2	....	31.8	45.5	4.5	....	....	....	....	....
Mass.	21.5	35.7	21.4	....	21.4	21.1	50.0	26.3	2.6	....	....	....	....	100.0	....	....	....	....	....	....
Mich.	36.4	13.3	24.8	25.5	....	34.2	43.0	7.9	2.6	12.3	37.5	29.5	20.5	12.5	....	15.4	7.7	46.2	15.4	15.3
Minn.	36.4	24.3	25.4	13.9	....	23.8	45.5	20.8	2.0	8.9	54.4	29.8	12.3	3.5	....	13.0	4.3	56.6	17.4	8.7
Miss.	40.4	28.1	10.5	21.0	....	17.4	60.9	13.0	....	8.7	21.1	15.8	26.3	31.6	5.2	....	....	....	....	....
Mo.	35.6	14.4	20.7	27.7	1.6	25.0	37.5	17.5	11.7	8.3	35.8	3.7	6.2	54.3	....	17.8	36.6	34.7	5.0	5.9
Mont.	46.7	20.0	20.0	13.3	....	45.5	36.3	9.1	....	9.1	75.0	8.3	16.7	....	....	33.4	....	33.3	....	33.3
Nebr.	18.0	26.2	40.1	15.7	....	8.1	31.4	30.5	13.1	16.9	5.1	46.2	41.0	7.7	....	16.1	30.2	39.7	6.5	7.5
Nev.	50.0	22.2	11.1	16.7	....	21.4	57.2	21.4	....	....	....	....	....	....	....	....	....	....	....	....
N. H.	50.0	18.2	22.7	9.1	....	50.0	35.0	15.0	....	....	38.5	23.0	23.1	15.4	....	....	....	....	....	....
N. J.	....	50.0	16.7	....	33.3	42.1	52.6	5.3	....	....	33.3	33.3	33.4	....	....	....	35.7	64.3	....	....
N. Mex.	44.0	....	16.0	40.0	....	....	....	....	....	....	100.0	....	....	....	....	....	....	....	....	....
N. Y.	50.5	10.9	20.8	17.8	....	45.7	20.0	11.4	8.6	14.3	55.5	16.7	13.9	13.9	....	....	....	....	....	....
N. C.	47.7	23.1	23.1	3.1	3.0	30.2	54.7	15.1	....	....	8.3	8.3	20.9	62.5	....	11.8	52.9	35.3	....	....
N. Dak.	62.9	12.6	9.1	14.7	.7	35.1	35.1	14.9	4.3	10.6	60.5	20.9	16.3	2.3	....	4.1	4.1	51.0	20.4	20.4
Ohio.	21.3	26.2	32.7	18.3	1.5	36.9	33.8	10.5	7.5	11.3	30.9	23.8	29.5	15.8	....	8.9	22.4	56.7	4.5	7.5
Okla.	35.9	23.4	11.7	28.3	.7	21.3	43.8	16.2	11.2	7.5	100.0	....	....	....	....	24.0	30.0	32.0	10.0	4.0
Oreg.	36.6	7.3	24.4	29.3	2.4	29.4	17.6	38.3	8.8	5.9	53.6	10.7	14.3	21.4	....	30.0	20.0	15.0	15.0	20.0
Pa.	25.9	13.0	36.1	23.1	1.9	39.8	34.5	16.8	8.0	1.9	47.5	15.2	11.9	25.4	....	3.6	10.7	78.6	3.6	3.5
R. I.	50.0	50.0	....	....	....	33.3	66.7	....	....	....	42.9	....	....	57.1	....	....	....	....	....	....
S. C.	30.8	5.1	30.8	33.3	....	26.8	56.1	14.7	2.4	....	25.0	20.8	25.0	29.2	....	16.7	44.5	33.3	5.5	....
S. Dak.	56.5	13.7	15.3	14.5	....	20.5	31.3	24.1	12.1	12.0	66.7	19.3	10.5	1.8	1.7	25.0	16.7	25.0	22.2	11.1
Tenn.	65.1	8.7	13.6	11.6	1.0	44.1	36.4	13.0	3.9	2.6	11.5	....	23.0	63.9	1.6	20.2	40.5	38.1	1.2	....
Tex.	36.7	13.9	34.8	14.6	....	42.4	42.3	11.7	.9	2.7	21.9	12.5	45.3	20.3	....	32.7	30.8	23.1	7.7	5.7
Utah.	43.5	17.4	30.4	8.7	....	27.3	45.4	18.2	....	9.1	46.1	23.1	23.1	7.7	....	8.3	25.0	50.0	....	16.7
Vt.	50.0	....	14.3	14.3	21.4	33.4	33.3	8.3	....	25.0	100.0	....	....	....	....	....	....	....	....	....
Va.	62.4	9.2	11.9	16.5	....	40.6	42.2	12.5	1.6	3.1	16.4	7.5	20.9	55.2	....	25.6	35.9	38.5	....	....
Wash.	40.8	3.7	5.5	38.9	11.1	46.8	25.5	19.2	2.1	6.4	40.8	18.5	25.9	14.8	....	....	....	81.8	9.1	9.1
W. Va.	55.2	10.5	8.8	29.5	1.0	47.3	30.9	14.5	7.3	....	34.9	1.6	4.8	58.7	....	7.7	7.7	84.6	....	....
Wis.	60.2	9.7	14.2	14.2	1.7	58.8	26.3	11.2	1.2	2.5	73.1	5.8	17.3	3.8	....	15.8	10.5	47.4	....	26.3
Wyo.	92.6	3.7	....	3.7	....	25.0	70.0	5.0	....	....	72.0	4.0	12.0	12.0	....	16.7	8.3	25.0	41.7	8.3

The feeding sections sell fairly uniform numbers throughout the year, but estimates indicate that about 10 per cent more cattle are marketed in the spring than in the fall, the large proportion of cattle marketed in the fall being due chiefly to the annual contribution from the range States. The marketing of hogs is overwhelmingly a fall and winter movement throughout the country. This is due largely to the prevailing practice of having pigs farrowed in the spring in order to grow and fatten them most economically. The surplus-producing mutton States ship large numbers in the fall, which makes this the heavy marketing season for sheep. It is estimated that these States market 62 per cent of their sheep during the fall months. The sheep-feeding sections of the United States tend toward selling in the summer, with the exception of those few States which make a specialty of shipping spring lambs.

On the whole the data at hand indicate that both the buying of stockers and feeders and the selling of fat stock, especially from grazing sections, are confined too generally to a few months of the year. Although it is evident that movements of live stock are subject in a large degree to the same natural conditions that fix the limits of the grazing season and the maturity of crops available for stock feeding, and while such factors as the distribution of labor and accessibility of credit must be taken into consideration, nevertheless it is manifest that live stock operations in many sections are susceptible of better adjustment to market conditions, and that in the aggregate such readjustments would exert a marked influence toward a more even distribution of the supply. An excellent illustration of the possibilities in this direction is found in the activities of the National Wool Growers Association with reference to the introduction of early lambing, which has resulted in extending the market movement of northwestern lambs over the entire summer in addition to the brief fall period during which lambs from that section formerly were marketed. In feeding districts also, especially in the North Central States, it will be feasible in many instances to alter the time of placing animals on feed so as to regulate the time of marketing to better advantage, thus contributing to a more even-running supply and consequently more stable market conditions.

COST OF DRIVING AND HAULING STOCK.

After the animals have been started on feed or pasture, preparatory to finishing for slaughter, the first marketing cost is incurred by the transportation of the animals from the farm or range to the shipping point. Figures 1 and 2 on Plate I show, respectively, the cost of driving cattle and hauling hogs the various distances shown; the charges are independent of shrinkage costs. The figures are based on data taken from a bulletin of the Department of Agriculture[1] supplemented by the results of other investigations. The costs are expressed in terms of one lot of cattle and one wagon load of hogs, respectively, as the cost per head would vary greatly according to the number of animals involved. (Pl. I, figs. 1 and 2.)

[1] Andrews, Frank, Costs of Hauling Crops from Farms to Shipping Points. U. S. Dept. of Agriculture Bureau of Statistics, Bulletin No. 49, 1907, pp. 25 and 39.

CONSIGNMENT TO MARKETS BY OWNERS.

The figures of Table 2 (pp. 12–14) show that the corn belt States lead all other groups in the percentage of marketed cattle shipped in carload lots by owners. Approximately one-third of the cattle sold from this group of States are disposed of in this manner. About one-fourth of the cattle marketed from the States of the southwestern and northwestern groups are shipped by owners. The proportion of cattle thus marketed in the cotton States is about one-twelfth of the total sold, while the ratio in the New England States is too small to record.

About one-twelfth of the calves sold from the States of the corn belt, which include several prominent dairy States, are shipped by owners. In the Northwest approximately one-tenth of the calves are shipped by owners. This fact is not surprising when it is considered that the northwestern group includes the States of Oregon and Washington, which rapidly are increasing their dairy industry. Data from the New England States indicate a very small proportion of shipments by owners. The lowest ratio is found in the States of the Southwest, where about 1 per cent of the calves sold are shipped by the owners.

As is to be expected in regard to hogs, the percentage shipped by owners runs highest in the corn belt, where about 23 per cent are sold in this manner. The corresponding proportion in the New England States is negligible, while the ratio thus marketed by the cotton States is about one-thirteenth. The rapid growth of the hog industry in the western and northwestern range States is indicated by their ratio for hogs shipped in carload lots by owners, which is greater than that for any other group except the States of the corn belt. In the marketing of sheep in carload lots by owners, the States of the Northwest rank highest; there about 41 per cent are shipped by producers. The corn belt group is second, with approximately 40 per cent thus marketed. With the exception of the New England States, for which no figures are given, the cotton States rank lowest in the number of sheep shipped to market by owners. In this group about one-sixteenth are shipped in this manner.

Comparing one class of animals with another in the same group of States, it is found in all sections, except the cotton States, that sheep show the largest proportion shipped in carload lots by growers, followed by cattle, then by hogs, and lastly by calves. In the cotton States the order as to numbers shipped by owners is cattle, hogs, sheep, and calves. In fact, in all the State groups of Table 2 the proportion of sheep marketed by owners leads to the conclusion that the majority of sheep producers are large-scale growers or feeders who handle stock in such numbers as to permit marketing in carload lots. The same is true of cattle, but to a less extent. The data on shipment of hogs by owners indicate the extent to which that class of animals has been introduced in the various systems of farm management in different sections of the country. The readiness with which hogs can be handled by retail butchers and small packing establishments also makes them the most negotiable form of live stock, which encourages their production in either large or small numbers. The small proportion of calves shipped in carload lots by owners is due largely to the fact that they are, so to speak, a by-product of other systems of live-stock farming, and therefore producers dispose of them regardless of numbers, as soon as they reach a marketable age.

CONSIGNMENT TO MARKETS BY LOCAL DEALER-SHIPPERS.

An important economic factor in the marketing of live stock through the centralized market is the local dealer-shipper, or country buyer. An analysis of the receipts of the large public stockyards of the United States shows that country buyers consign at least 55 per cent of the total number of animals received. Hogs most generally are marketed in this manner; and calves, cattle, and sheep rank in the order named.

The schedules of questions which were sent to special live stock and price reporters included an inquiry as to the gross margins per hundredweight received by local dealer-shippers of live stock. The replies reveal some interesting figures relative to the operations of this class of dealers, who handle approximately one-third of the live stock marketed in the United States. A study of the margins set forth in Table 10 shows that, in general, the margins of the dealers vary inversely as the volume of business in the different States. The most usual margin received by dealer-shippers on cattle, calves, hogs, and sheep, the country over, is $1 per hundredweight.

TABLE 10.—*Average margins per hundredweight received by local dealer-shippers.*

State.	Cattle.	Calves.	Hogs.	Sheep.	State.	Cattle.	Calves.	Hogs.	Sheep.
Alabama	.....	.....	.....	.....	Nebraska	0.58	0.74	0.55	0.59
Arizona	0.90	.....	0.90	.....	Nevada	.....	.....	.....	.....
Arkansas	1.19	1.16	1.15	1.29	New Hampshire	1.00	1.00	1.00	1.00
California	1.01	1.12	1.00	.93	New Jersey	1.00	2.00	1.00	1.00
Colorado	.80	1.25	.63	1.12	New Mexico	.....	.....	.....	.....
Connecticut	1.00	1.75	.....	.....	New York	.99	1.47	1.11	1.06
Delaware	.....	.....	.....	.....	North Carolina	1.14	.....	1.50	1.83
Florida	1.17	1.00	.80	1.00	North Dakota	.96	1.11	.98	1.18
Georgia	1.00	1.33	1.25	1.25	Ohio	.76	1.33	.69	1.06
Idaho	1.51	2.50	1.20	1.00	Oklahoma	.87	.83	.80	.88
Illinois	.65	1.10	.61	.92	Oregon	1.00	1.00	1.12	.93
Indiana	.62	1.21	.58	1.04	Pennsylvania	.87	1.34	.99	1.34
Iowa	.64	.98	.59	1.01	Rhode Island	.....	.....	.....	.....
Kansas	.56	.79	.72	.84	South Carolina	.....	.....	.....	.....
Kentucky	.94	1.53	.96	1.20	South Dakota	.78	.97	.69	.90
Louisiana	1.00	1.00	.....	.....	Tennessee	.95	1.43	1.12	1.44
Maine	1.50	1.16	.80	.60	Texas	.79	.83	.98	1.06
Maryland	.60	.93	.68	.90	Utah	1.50	1.25	1.67	1.38
Massachusetts	1.33	1.50	.83	.....	Vermont	1.00	1.00	1.00	1.00
Michigan	.77	1.34	.91	1.06	Virginia	1.36	1.62	1.19	2.05
Minnesota	.65	.87	.59	.82	Washington	.90	.75	.86	.88
Mississippi	1.23	1.25	1.37	1.37	West Virginia	1.41	1.90	1.15	1.56
Missouri	.63	1.22	.68	1.04	Wisconsin	.63	1.07	.57	.89
Montana	1.00	1.00	1.00	1.00	Wyoming	.75	.75	.75	.75

Special reports from 15 centralized live stock markets indicate that the country dealer-shipper consigned to these markets, in 1915, a total of approximately 3,998,300 cattle, 16,279,100 hogs, and 3,602,300 sheep. The country dealers' gross margins on these animals, based upon the estimated margins shown by Table 10, amounted in round numbers to about $29,912,000 on cattle, $23,897,000 on hogs, and $2,490,000 on sheep, or a total of $56,299,000 for their consignments to 15 markets. Compared with the estimated value of the animals sold, the gross margins realized by local dealers represent 10.34, 10.33, and 12.9 per cent on cattle, hogs, and sheep, respectively. It must be borne in mind, of course, that out of this margin the dealer-shipper must pay the expenses of buying and handling, freight charges, feed, shrinkage, loss and damage in transit, commissions, yardage, dockage, and other marketing expenses. These huge sums, however, serve to emphasize the fact that live stock producers, in the aggregate,

pay to local shippers a toll sufficient to determine the difference between profit and loss. Usually it is the small stockman who does not produce enough animals to fill a car who sells to the local buyer.

Considering the groups of States in Table 2 it is noted that considerable percentages of animals of different classes are handled by local dealer-shippers in the various sections of the country. In the corn belt States the percentages of cattle, calves, hogs, and sheep handled by dealer-shippers are greater than those of any other system of selling listed in Table 2. In the cotton States this method ranks second, in every case the principal means of sale being through the local butchers. The proportions taken by the dealer-shippers in the States of the Southwest are next to the largest for every class of animals but sheep, and in this connection attention should be called to the fact that a large percentage of the sheep of Arizona, New Mexico, and southern Colorado are handled through the general merchants of those sections, who act as contractors. For this service these merchants receive a commission, and although technically they are not dealer-shippers, they serve the same function and for practical purposes are to be classed with them. If all the sheep handled by these contractors were added to those reported for the dealer-shippers, there is little doubt that the proportion of sheep sold to local dealer-shippers would be raised from third to second place, and thus would correspond with the returns for other classes of stock in the southwestern group. In the Northwestern States the proportions of all classes of stock taken by dealer-shippers rank third, except for hogs; and in these States the dealers handle a greater percentage of the hogs than are sold by any other method, as they are produced on too small a scale to permit marketing in carload lots by owners.

Approximately one-half of the cattle and sheep, nearly one-half of the calves, and three-fifths of the hogs of the corn belt States are sold through dealer-shippers. In the cotton States these middlemen handle about one-third of the cattle, calves, and sheep and about one-sixth of the hogs. In the southwestern and northwestern groups the local buyers market approximately one-fourth of the cattle, one-fifth of the hogs, and one-sixth of the sheep. In the former group of States one-third of the calves are shipped by dealer-shippers, while one-sixth of the calves are thus marketed in the Northwestern States. In the New England States the prevailing method of marketing all kinds of stock is through the dealer-shippers, except in some localities where selling to local butchers predominates.

COOPERATIVE LIVE-STOCK SHIPPING ASSOCIATIONS.

The purpose of cooperative associations for the shipment of live stock is to enable farmers who produce marketable stock in small numbers to sell their animals at the centralized live stock markets at prevailing market prices, less the actual cost of marketing. This method of marketing stock is adapted particularly to sections in which live stock production is incidental to other systems of farming, and where consequently most farmers have only a few animals to sell at one time. Although the custom of combining two or more consignments of animals to make up a carload for shipment to market has been more or less common among farmers for many years, the first cooperative association for that purpose was organized at Litchfield, Minn., in 1908. Other communities were quick to see the benefits of

this method of shipping live stock, and the movement has extended rapidly. Thus far this office has learned of approximately 750 organizations, located in 15 States, that are marketing live stock in a cooperative way. The list is being increased continually. Of the total mentioned, about 430 are primarily live stock shipping associations, while the remainder consist of cooperative elevators and other farmers' associations that are conducting a live stock shipping business as a department or branch of the organization. The former are distributed in 13 States, as shown on the accompanying map. (Pl. II, fig. 1.) At least 215, approximately half, of these associations are in the State of Minnesota.

Referring to the summary of schedules in Table 1, it will be seen that the cooperative shipping of live stock is reported from some of the States not indicated by the map. This fact is explained in part by the practice of combining stock to make carload shipments without a regular organization for the purpose, which is not an uncommon practice. Doubtless also there are other associations of this kind, the names of which have not yet been included in the list mentioned. It is noticeable, however, that the States in which cooperative shipping appears most prevalent according to the schedules summarized in Table 1 correspond closely with the States in which organizations for this purpose are known to be located, as shown in Plate II, figure 1. In Minnesota, for example, it is shown by the schedules that 22 per cent of the cattle, 13 per cent of the calves, 24 per cent of the hogs, and 15 per cent of the sheep are shipped through cooperative organizations. Estimates of the proportions of stock thus marketed from 14 other States in which such associations are known to be located are as follows, by classes of stock: Cattle 3.6 per cent, calves 3.8 per cent, hogs 4.6 per cent, and sheep 3.5 per cent.

The organization and operation of these associations have been described in detail in Farmers' Bulletin 718.[1] The simplicity of the plan accounts to a large extent for the rapid extension of the movement. A simple constitution and by-laws are sufficient; and no capital is necessary, because each shipper receives payment for his stock after the returns on each car are received. Stock pens and scales are furnished by railroads at loading points; consequently but little equipment is required. The selection of a competent manager is, perhaps, the most important factor in the success or failure of the organization. He must be both honest and capable, with a thorough knowledge of live stock and an understanding of business methods and principles. With such a manager and a spirit of loyalty among the members of the association, the success of such a movement usually is assured.

The cost of marketing live stock through these associations consists of specified charges, which are deducted from the returns of each shipment to cover the manager's compensation and incidental expenses and to maintain a sinking fund or protection fund; also the pro rata share of freight, yardage, commission and feed, and other market expenses on each carload. The manager's fee usually is from 5 to 8 cents per hundredweight, but in some associations a rate per car is fixed, in which case the usual amounts are $10 to $15 per car. The sinking fund is for the purpose of reimbursing members for animals killed or injured in transit. Two cents per hundred-

[1] Doty, S. W., and Hall, L. D., Cooperative Live Stock Shipping Associations. U. S. Dept. of Agriculture, Farmers' Bulletin 718, 1916.

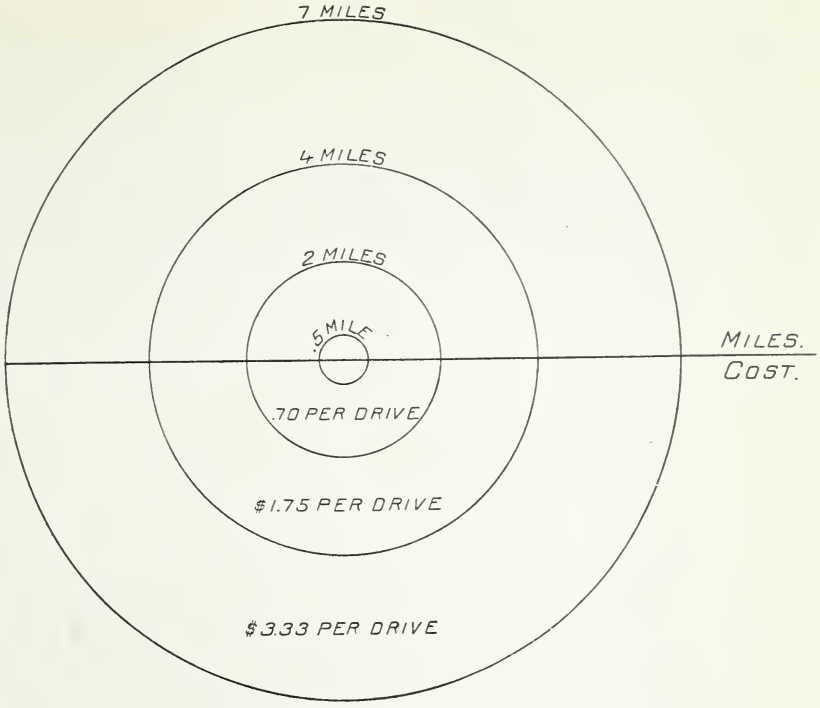


FIG. 1.—THE COST OF DRIVING CATTLE

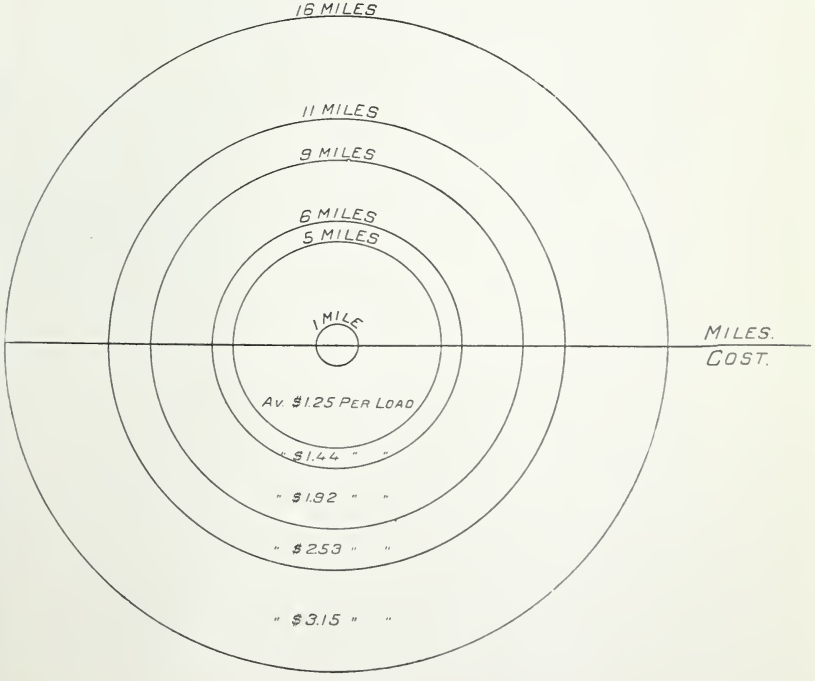


FIG. 2.—THE COST OF HAULING HOGS.

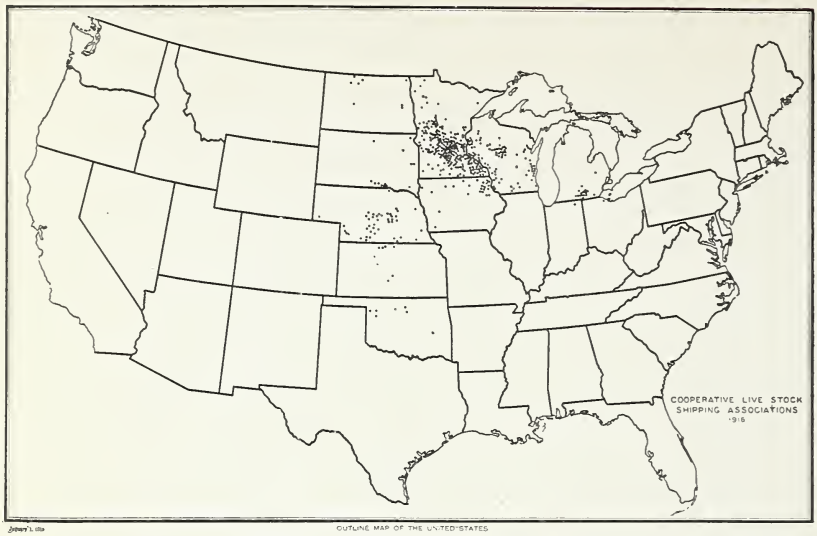


FIG 1.--COOPERATIVE LIVE-STOCK SHIPPING ASSOCIATIONS.

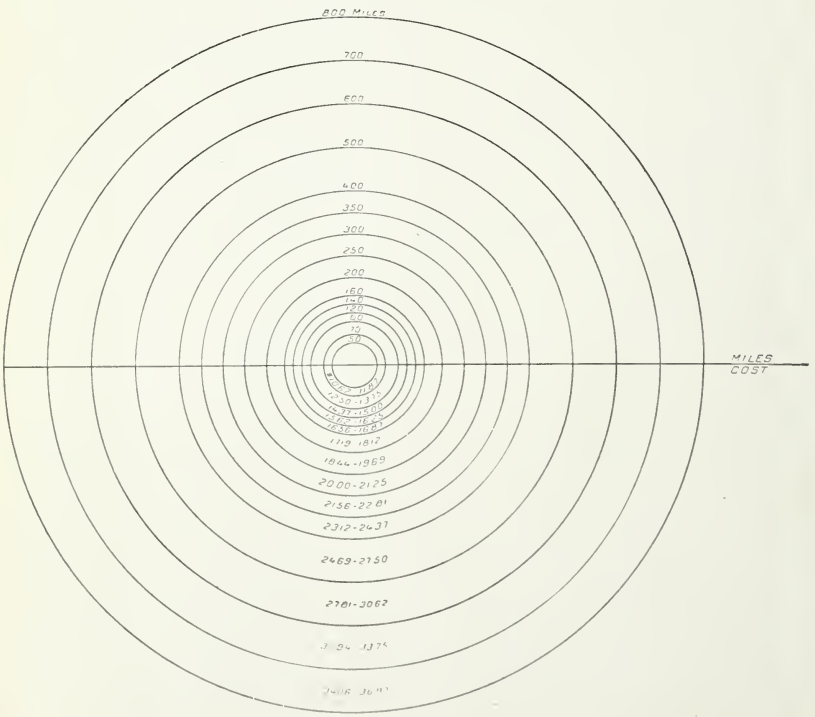


FIG. 2.—REPRESENTATIVE FREIGHT RATES PER HUNDRED POUNDS ON CARLOAD SHIPMENTS OF CATTLE; AND CARLOAD SHIPMENTS OF HOGS, SHEEP, CALVES, AND GOATS IN DOUBLE-DECK CARS.

weight on all cattle shipped and 3 cents per hundredweight on all hogs, sheep, and calves shipped by the association usually are the rates adopted to provide for such a fund.

The gross cost of marketing in this manner is indicated by statements of the Farmers' Shipping Association of Litchfield, Minn., which show that the average expense for the years 1913, 1914, and 1915 has been 33 cents per hundredweight, and that this is from 10 to 40 cents less than the average margins on which local buyers formerly bought from farmers in the community. The relative cost of marketing the different classes of animals also is shown by a statement of the same association concerning its business for the calendar year 1915, as follows:

TABLE 11.—*Operations of Litchfield Live Stock Shipping Association, 1915.*

Class of animals.	Number.	Weight.	Average weight.	Expense per hundredweight.	Receipts.	Expenses.	Net.
		Pounds.	*Pounds.*				
Hogs	7,711	1,590,415	206	$0.328	$106,198.07	$5,219.07	$100,979.00
Cattle	2,028	1,707,195	841	.285	88,987.01	4,860.96	84,126.05
Veal calves	1,695	242,625	143	.55	18,849.71	1,343.25	17,506.46
Sheep	375	41,290	110	.46	2,483.63	190.53	2,293.10

It is noted that the marketing expense per hundred pounds live weight was least, 28.5 cents, in the case of cattle, and greatest, 55 cents, on veal calves, hogs being marketed at a cost of 32.8 cents and sheep 46 cents per hundredweight. The nature of the expenses is shown by the following statement of disbursements:

TABLE 12.—*Classified disbursements of Litchfield Live Stock Shipping Association, 1915.*

Feed, straw, lumber, etc	$478.56
Manager's commissions	2,132.09
Freight and market expenses	9,003.16
Net paid out for stock	204,904.61
Total receipts	216,518.42

In the above instance the cost of marketing was 5.4 per cent of the gross receipts for live stock. This ratio, of course, varies largely at different places, according to the distances from market and corresponding differences in freight rates and shrinkage.

Other associations report returns as high as $2.25 per hundredweight above local prices, and a comparison of the marketing charges of these associations with the prevailing gross margins of $1 to $2 which local shipper-dealers realize on their shipments indicates the possibilities of this system of cooperative marketing.

These associations have economic and educational features which are of importance to any community in which farmers have live stock to market in small lots. The greater net return to the farmer because of the reduction of marketing expenses and the realization of actual market prices probably is the greatest advantage. The saving in time and labor in assembling the stock of a shipment, while not reducible to dollars and cents, also has an economic importance. Because of this saving it is often possible for the manager of the association to ship all the stock from the same territory formerly covered by several local shippers. Further, farmers are encouraged to study market conditions and demands and to learn how to pre-

pare stock for shipment. Of no less importance is the general improvement in the methods of marketing live stock in the community resulting from the activities of a competent manager and the influence of a successful association.

SELLING DIRECT TO PACKERS.

Sections in which the selling of live stock direct to packing concerns for shipment to their plants is a common method of marketing, and the comparative extent to which the practice prevails is indicated by the data in Tables 1 and 2, sixth column (pp. 9 to 14), showing the percentages of the different classes of animals sold to packers' agents for shipment. Some of the estimates on this item doubtless include animals which are sold to packing establishments not located at the large centralized markets and packing points. On the other hand, the estimates in the preceding column, of stock sold to local packers, doubtless refer in some instances to establishments which operate on a large scale, and a part of the animals sold to local dealers are resold to packers. It is impossible to state what allowance should be made for these factors, but it is probable that the percentages of animals sold to be shipped direct to packing plants is greater, in many instances, than Tables 1 and 2 seem to indicate.

Comparing the different sections with respect to the practice of selling direct to packers, it is evident that all classes of stock are sold in this manner more largely in California than in any other State or section; and that it is most characteristic of the western group of States in general. This condition is associated with the absence of centralized live-stock markets at Pacific slope points. Such markets have been established at several places in the Pacific Northwest during recent years, but the packing centers of California still obtain their live-stock supply chiefly by direct purchase from producers and dealers. In Massachusetts cattle and sheep bought by packers consist largely of stock which is shipped to plants at Boston and surrounding cities. Doubtless, also, some of the estimates representing sales to local packers in New England relate to animals which are slaughtered in plants at the large cities.

In the corn belt States the proportion of animals sold direct to packers is small, although it is a factor of considerable aggregate importance in the marketing of hogs, especially in Iowa. Comparatively negligible percentages of cattle, calves, and sheep are marketed in this way in the corn belt, west of Chicago. Indiana and Ohio cattle feeders sell considerable numbers of cattle to packers for slaughter at eastern seaboard cities.

In the cotton States, with the exception of cattle marketed from Georgia and Florida and hogs from Louisiana, very small proportions of the different classes of live stock are sold for shipment direct to packers. This may be attributed mainly to the lack of surplus stock in the South, together with the unsatisfactory marketing and shipping facilities which exist.

Until properly organized and equipped centralized live-stock markets are developed in the sections which now market a large portion of their live stock by selling direct to packers, that method of marketing presumably will remain an important factor in those parts of the country. The present tendency and effect of direct country buying in the Middle West, particularly as regards hogs marketed from the corn belt, is a matter of much discussion. At a

hearing conducted by the Chief of this office November 15 and 16, 1915, at Chicago, the following statement was presented by the secretary of the American National Live Stock Association as an authorized expression of the views of that organization:[1]

The increased selling of live stock in the country direct to slaughterers is a manifest expression of dissatisfaction on the part of the producer with some of the market methods, is a protest against the increasing expenses of handling live stock on public markets, and plainly shows a desire to avoid the uncertainties of the market. A producer knows what he is to receive when he sells in the country. Nobody knows what he is liable to get when he ships to market. It is difficult to understand how purchases in the country can have much if any real effect on the prices at central markets; it removes some competition, it is true, but at the same time it relieves the market from the burden of additional receipts. The two balance. Such purchases and sales in the country are not likely to increase under the present live-stock conditions and the small holdings of stock by any one owner. The question of country buying is primarily one between the producer and the packer.

At the same hearing the chairman of the committee on country buying of the National Live Stock Exchange made the following remarks relative to the views of commission men on country buying:

As regards fat cattle, it is advocated to-day that the man who sells a lot of cattle, hogs, or sheep to the packer in the country is digging his own grave; he has taken the competition, or the demand, rather, out of the market for that article, and he has depressed the market not only on himself, but on every other market in the United States, as well as every feed lot. The packer does not go to the country for his health or because he is a philanthropist or wants to help the producer. He goes there for a direct purpose, and that purpose in many instances is to break the big market at Chicago, and by breaking that he breaks it all over the United States. He goes out and buys trainloads of sheep, piles of hogs and cattle, and takes the orders out of Chicago, which naturally depresses the market.[2]

It is contended also that special through-billing and double-decking privileges granted by railroads to large packing interests on hogs handled through certain concentrating stations give packers an undue advantage over other shippers. At these stations, which are located principally in Iowa, also in Illinois, Minnesota, and South Dakota, hogs are shipped from local points in single-deck cars, weighed, sorted, and reloaded into double-deck cars at the assembling points, and forwarded direct to packing plants, particularly to those in the East. The saving effected by applying through rates to the hogs without maintaining the identity of the shipment from point of origin to destination is said to be a material factor in favor of direct buying.

In reply to inquiries from this office to the five largest packing companies, the following statements were received, which indicate their position with reference to country buying:

(1) So far as we know, none of the packers are engaged in the business of buying live stock in the country for the purpose of supplying their plants located at the large stockyard points. As far as we know, there is no country cattle buying west of Chicago except through live-stock commission firms. All the packers who have slaughterhouses in New York and other seaboard towns purchase a certain amount of their supplies of fat cattle for these plants in States east of Chicago, viz, Indiana, Ohio, Kentucky, Virginia, and Pennsylvania. This buying is forced by competition and is justified by the saving in transportation and feed, in shrinkage in transit, and in freedom from bruises. The cattle raiser is able to get a better price for his cattle, in addition to avoiding the stockyards' charges and the commission for selling. About 1 per cent of the cattle of the large packers is country bought. The same remarks apply in the case of sheep and lambs. There are in Iowa, South Dakota, Minnesota, and Wisconsin packers who do a fairly large business, whose plants are located at points where there are no stockyards, necessitating their going to the country for their hogs. At

[1] United States Congress (64th), House Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats, and Related Matters (1916), p. 16.
[2] *Ibid.*

some of these points hogs are bought for eastern slaughterhouses. We know of the following points where buying is done by various packers: Cudahy, Wis.; Sioux Falls and Mitchell, S. Dak.; Kearney, Nebr.; Albert Lea and Austin, Minn.; Fort Dodge, Des Moines, Cedar Rapids, Greenfield, Creston, Ottumwa, McGregor, Muscatine, Clinton, Burlington, and Valley Junction, Iowa, and Savannah and Keithsburg, Ill.

So far as we know, there is direct purchasing of hogs in stockyards town only at Chicago, St. Louis, and Kansas City, and in each of these cases the plant involved is not located adjacent to the stockyards so as to be able to obtain a supply of hogs on an equal basis with its competitors. These three plants are from 2 to 10 miles distant from the stockyards, so that if they purchased their supply of hogs on the local yards the hogs would have to be loaded into cars involving expense for loading, switching, as well as shrinkage in transit and bruises, all of which would prevent them from competing successfully—volume about 1,000,000 head per year.

Country buying was not inaugurated, so far as we know, with any idea of injuring the business of the commission firms or getting any undue advantage over the owner of the stock. It is the natural and necessary way to secure a supply of hogs for plants not situated at stockyards; it will have to be continued as competition forces the adoption of economic methods. We understand good market values are paid the shippers for their hogs and the shippers are satisfied, and the practice is fully justified by its economic advantages to all concerned.

(2) So far as we are concerned, our buying in the country has been only occasional and when done has been solely when we felt the necessity of having to make an individual endeavor to secure at a given market some supplies which would not otherwise be there. For instance, we have bought west of the Missouri River sheep for use at Sioux City, which would otherwise have come direct to Chicago. Also, during shortages of hogs at Kansas City, we have bought, at interior points in Iowa, hogs that otherwise would have moved eastward rather than westward. But, naturally, we have only felt like assuming the extra cost of such transactions when supplies were short.

The relative percentage of such purchases in our total volume is extremely small and there is no single location where any substantial volume has been secured, the point being that, in times of need, we have had to go wherever the particular live stock could be secured.

(3) This company does practically no country buying. At the time we were exporting live cattle, we used to buy a good many Virginia cattle, the advantage being that a large amount would have to go forward at a definite time, and in this way we would not have to depend on what came to the market. Occasionally in the last few years we bought Kentucky distillery cattle and shipped them direct to New York. At the time of the foot-and-mouth quarantine we were forced to buy some cattle to supply our New York houses, as shipments from Chicago markets were prohibited and there were not enough cattle of satisfactory quality coming from the western markets to supply our trade. We have never bought any hogs in the country. As a whole we believe that both the stockmen and the packers would be better off if all the packers bought all the stock they kill on the open market.

(4) This is something that enters into our business in a very small way. The only country buying we do is in the spring and summer—we purchase cattle that are fed in Kentucky, Indiana, and Ohio for shipment to our New York abattoir. The reason for this is that these cattle would not move toward any of the markets where we have regular buyers. We don't buy any hogs or sheep in the country and have no buying stations.

(5) It has not been the policy of this concern to purchase to any great extent in the country. Personally I am rather opposed to the idea, as I feel there is very little advantage to the packers in operating on country buying, and I am of the opinion that it ultimately would be a disadvantage to them.

The extension of this method of marketing appears to be limited by the conditions that have caused the development of the great live stock market centers, as noted in the section of that subject. The cooperative live stock shipping association movement, which is a factor of increasing importance, also makes for the maintenance of the centralized markets and thereby inhibits the growth of direct buying operations.

It is obvious, however, that in so far as the sale of meat animals direct to packers tends toward the unstabilizing or manipulation of prices and movements at the central markets, the effect must be detrimental to the industry, and that any special privileges or abuses which exist in connection with the practice manifestly should be abolished or rectified.

RAILROAD SERVICE.

Among the numerous and important problems involved in the transportation of live stock to market, only a few that bear most directly upon the cost of marketing could be considered in this investigation. The subjects on which data have been assembled are freight tariffs, train service, loading and bedding cars, feed in transit, loss and damage, and shrinkage in transit.

FREIGHT TARIFFS.—Freight rates, minimum carload rates, and other provisions of railroad contracts for the transportation of live stock vary so greatly throughout the United States that general statements relative to the cost of transportation are subject to much modification. For example, in the Southeast and in some sections of the West it is the general practice to publish live-stock rates on a per car basis, the rate varying with the length of the car; while in most other territory the rates are named on a weight basis. Minimum weights and car lengths also vary among railroads in the same territory.

Plate II, figure 2, and Plate III, figures 1 and 2, illustrate the maximum rates recently prescribed by the Interstate Commerce Commission for a single-line transportation of live stock in Central Freight Association territory.[1]

Although not applicable to all parts of the country, the ratios are significant in this connection. A comparison of quoted tariffs effective in the different sections of the country is impracticable, owing to the variations mentioned above; but certain general differences are shown in a compilation of rates in the three principal freight classification territories which has been made by Mr. Frank Andrews of the Bureau of Crop Estimates (see Table 13). These averages, which were based on total tonnage carried and average length of haul, show average freight rates for the years 1911, 1912, and 1913, as follows: Eastern or official territory, 10 cents; southern territory, 11.9 cents; western territory, 14.9 cents. (For definitions of territories mentioned, see Table 13.) Rates on cattle, hogs, and sheep for selected routes also are shown in Tables 14, 15, and 16.

TABLE 13.—*Average freight rates and lengths of haul for live stock and dressed meats carried on railroads in the United States, 1911–1913.*

[Compiled from reports of the Interstate Commerce Commission. The figures are based upon data for 60 to 65 per cent of the total operated mileage of railroads of the United States.]

Item, and year ending June 30.	District.[2]			United States.
	Eastern.	Southern.	Western.	
LIVE STOCK.				
Average receipts per ton-mile:				
1911.....cents..	0.789	1.490	1.386	1.214
1912.....do....	.813	1.568	1.401	1.230
1913.....do....	.842	1.723	1.397	1.258
Mean, three years.....do....	.815	1.594	1.395	1.234
Average length of haul:				
1911.....miles..	252.90	161.59	221.21	224.10
1912.....do....	256.26	152.25	210.83	216.76
1913.....do....	228.34	138.12	209.12	208.84
Mean, three years.....do....	245.80	150.65	213.72	216.57

[1] Interstate Commerce Commission Order in the Eastern Live Stock Case 36, I. C. C., 675 (Dec. 2, 1915).

[2] The three districts are thus defined: The eastern district comprises that portion of the United States "bounded on the west by the northern and western shore of Lake Michigan to Chicago, thence by a line to Peoria, thence to East St. Louis, thence down the Mississippi River to the mouth of the Ohio River, and on the south by the Ohio River from its mouth to Parkersburg, W. Va.; thence by a line to the southwestern corner of Maryland, thence by the Potomac River to its mouth." The southern district is bounded on the north by the eastern district and on the west by the Mississippi River. The remainder of the United States, exclusive of Alaska and island possessions, is included in the western district.

TABLE 13.—*Average freight rates and lengths of haul for live stock and dressed meats carried on railroads in the United States, 1911–1913*—Continued.

Item, and year ending June 30.	District.			United States.
	Eastern.	Southern.	Western.	
LIVE STOCK—continued.				
Average freight rate per 100 pounds, for a haul of average length:				
1911.....cents..	10.0	12.0	15.3	13.6
1912.....do....	10.4	11.9	14.8	13.3
1913.....do....	9.6	11.9	14.6	13.1
Mean, three years.....do....	10.0	11.9	14.9	13.3
DRESSED MEATS.				
Average receipts per ton-mile:				
1911.....cents..	.892	.972	1.121	.960
1912.....do....	.896	1.091	1.150	.984
1913.....do....	.893	1.043	1.106	.965
Mean, three years.....do....	.894	1.035	1.126	.970
Average length of haul:				
1911.....miles..	309.52	247.65	313.20	306.80
1912.....do....	327.11	255.15	321.20	319.90
1913.....do....	327.07	254.85	327.47	322.73
Mean, three years.....do....	321.23	252.55	320.62	316.48
Average freight rate per 100 pounds, for a haul of average length:				
1911.....cents..	13.8	12.0	17.6	14.7
1912.....do....	14.7	13.9	18.5	15.7
1913.....do....	14.6	13.3	18.1	15.6
Mean, three years.....do....	14.4	13.1	18.1	15.3

TABLE 14.—*Freight rates per 100 pounds on cattle over various routes, in January, 1915.*

[Freight rates were furnished by the Division of Tariffs, Interstate Commerce Commission. Minimum weights of carloads subject to the rates below range from 20,000 to 22,000 pounds.]

From—	To—	Approximate distance.[1]	Rate per 100 pounds.
		Miles.	*Cents.*
Fort Worth, Tex	Kansas City, Mo	508	33.5
Do	East St. Louis, Ill	743	39.5
North Platte, Nebr	South Omaha, Nebr	287	17.42
Billings, Mont	South St. Paul, Minn.[2]	892	41.5
Mankato, Minn	do	86	12.5
Kansas City, Mo	Ames, Iowa	256	20.0
Do	Aurora, Ill	451	23.5
Do	East St. Louis, Ill	283	17.0
South Omaha, Nebr	Ames, Iowa	169	13.0
Do	Aurora, Ill	463	23.5
Centralia, Ill	East St. Louis, Ill	62	9.1
Beardstown, Ill	do	110	10.2
Galesburg, Ill	do	196	12.3
Moline, Ill	do	247	13.8
Mendota, Ill	do	244	14.1
Fort Worth, Tex	Chicago, Ill.[3]	924	49.75
Kansas City, Mo	do	454	23.5
South Omaha, Nebr	do	496	23.5
South St. Paul, Minn.[2]	do	398	25.0
Ames, Iowa	do	326	22.0
Aurora, Ill	do	37	7.6
Mendota, Ill	do	83	9.5
Galesburg, Ill	do	163	11.7
Beardstown, Ill	do	236	12.9
Colmar, Ill	do	217	13.2
Dubuque, Iowa	do	186	14.7
Chicago, Ill.[3]	Buffalo, N. Y	540	18.9
Do	Pittsburgh, Pa	468	18.9
Do	Baltimore, Md	797	26.4
Do	Philadelphia, Pa	787	27.4
Do	New York, N. Y	908	29.4
Do	Boston, Mass	1,038	29.4
Erie, Pa	Buffalo, N. Y	88	9.5
Cleveland, Ohio	do	183	10.5
Elyria, Ohio	do	208	11.0
Sandusky, Ohio	do	243	13.7

[1] Over a representative route, as shown on passenger-service time tables.
[2] Plus $2.50 per car switching from St. Paul to South St. Paul.
[3] When to or from Union Stock Yards, $2 per car in addition to Chicago rate.

TABLE 15.—*Freight rates per 100 pounds on hogs over various routes, in January, 1915.*

[Freight rates were furnished by the Division of Tariffs, Interstate Commerce Commission. Minimum weights of carloads subject to the rates below range from 16,000 to 17,000 pounds for single-deck and 22,000 to 34,000 pounds for double-deck cars.]

From—	To—	Approximate distance.[1]	Rate per 100 pounds.
		Miles.	*Cents.*
Hastings, Nebr	South Omaha, Nebr	146	15.72
Sioux Falls, S. Dak	do	267	23.5
Hutchinson, Kans	Kansas City, Mo	223	20.0
Ardmore, Okla	do	471	44.25
Mexico, Mo	East St. Louis, Ill	120	13.5
Springfield, Mo	do	241	21.0
Centralia, Ill	do	62	11.0
Beardstown, Ill	do	110	12.7
Quincy, Ill	do	143	13.1
Galesburg, Ill	do	196	15.0
Moline, Ill	do	247	15.8
Mendota, Ill	do	244	16.3
South Omaha, Nebr	Chicago, Ill.[2]	496	23.5
Kansas City, Mo	do	454	23.5
East St. Louis, Ill	do	290	16.7
Ames, Iowa	do	326	22.5
Aurora, Ill	do	37	8.8
Mendota, Ill	do	83	11.6
Galesburg, Ill	do	163	14.4
Colmar, Ill	do	217	16.9
Dubuque, Iowa	do	186	15.8
Chicago, Ill.[2]	Buffalo, N. Y	540	18.9
Do	Pittsburgh, Pa	468	18.9
Do	Baltimore, Md	797	28.5
Do	Philadelphia, Pa	787	29.5
Do	New York, N. Y	908	31.5
Do	Boston, Mass	1,038	31.5
Erie, Pa	Buffalo, N. Y	88	9.5
Cleveland, Ohio	do	183	10.5
Elyria, Ohio	do	208	11.0
Sandusky, Ohio	do	243	13.7

[1] Over a representative route, as shown on passenger-service time tables.
[2] When to or from Union Stock Yards, $2 per car in addition to Chicago rate.

TABLE 16.—*Freight rates per 100 pounds on sheep over various routes, in January, 1915.*

[Freight rates were furnished by the Division of Tariffs, Interstate Commerce Commission. Minimum weights of carloads subject to the rates below range from 12,000 to 14,000 pounds for single-deck cars and 18,000 to 23,000 for double-deck cars.]

From—	To—	Approximate distance.[1]	Rate per 100 pounds.	
			In single-deck cars.	In double-deck cars.
		Miles.	*Cents.*	*Cents.*
Pendleton, Oreg	South St. Paul, Minn.[2]	1,712	93	93
Do	South Omaha, Nebr	1,568	93	93
Do	Denver, Colo	1,159	93	93
Cheyenne, Wyo	South Omaha, Nebr	512	54.4	34
North Platte, Nebr	do	287	22.1	17.42
Denver, Colo	do	532	54.4	34
Do	Kansas City, Mo	667	54.4	34
Pueblo, Colo	do	635	.....	34
Pendleton, Oreg	Chicago, Ill.[3]	2,062	.....	108
Cheyenne, Wyo	do	1,007	81.6	51
Denver, Colo	do	1,024	81.6	51
South St. Paul, Minn.[2]	do	398	27	27
South Omaha, Nebr	do	496	25	23.5
Kansas City, Mo	do	454	25	23.5
Chicago, Ill.[3]	Buffalo, N. Y	540	18.9	18.9
Do	Pittsburgh, Pa	468	18.9	18.9
Do	Baltimore, Md	797	28.5	28.5
Do	Philadelphia, Pa	787	29.5	29.5
Do	New York, N. Y	908	31.5	31.5
Do	Boston, Mass	1,038	31.5	31.5

[1] Over a representative route, as shown on passenger-service schedules.
[2] Plus $2.50 per car switching from St. Paul to South St. Paul.
[3] When to or from Union Stock Yards, $2 per car in addition to Chicago rate.

TRAIN SERVICE.—In reply to the question "Are cars furnished promptly?" 92.4 per cent of the special live stock and price reporters (Table 17) answered in the affirmative and 7.6 per cent in the negative. A larger percentage of negative replies was noted in some of the principal live-stock producing States than elsewhere.

The question "Is train service satisfactory?" was answered in the affirmative by 75 per cent of the correspondents, and in the negative by 25 per cent. The replies show a large proportion of negative answers in some of the States where live-stock production is a most important industry.

A summary of answers to the question "Is special stock train service operated through your shipping station?" shows that approximately one-half of the stations covered by the inquiry have such service and one-half do not.

TABLE 17.—*Railroad and market service, as reported by special live stock and price reporters, summarized by States.*

State.	Are cars furnished promptly?		Is train service satisfactory?		Special stock train service?		Railroad claims settled satisfactorily?		Market service satisfactory?	
	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.	Yes.	No.
Alabama	9	1	7	2	4	5	1	3	2	1
Arizona	4	0	1	1	0	3	2	0	1	0
Arkansas	9	1	18	6	9	18	3	3	20	1
California	15	0	12	3	11	3	8	3	5	2
Colorado	23	0	18	6	19	4	17	2	13	1
Connecticut	3	0	3	0	0	3	1	2	0	0
Delaware	2	0	1	0	1	0	2	0	0	0
Florida	14	1	8	5	2	10	7	5	4	3
Georgia	17	1	13	2	1	13	6	4	4	1
Idaho	9	1	8	5	6	5	7	1	3	4
Illinois	27	2	42	6	22	23	34	22	57	15
Indiana	74	8	64	21	24	58	27	22	54	12
Iowa	89	22	71	36	73	33	53	42	65	26
Kansas	139	10	93	29	84	51	82	38	81	34
Kentucky	47	5	42	8	17	35	29	15	33	5
Louisiana	6	0	6	0	0	6	3	1	2	0
Maine			12	2	2	9	5	1	5	0
Maryland	6	0	5	1	1	6	3	0	4	1
Massachusetts	6	0	5	0	0	7	1	1	5	1
Michigan	42	5	25	18	10	36	13	21	34	2
Minnesota	48	1	37	8	19	23	26	13	24	7
Mississippi	16	0	12	2	4	10	7	4	7	0
Missouri	58	4	38	5	31	18	23	10	35	5
Montana	6	0	5	1	5	1	5	1	4	1
Nebraska	115	3	76	39	78	34	59	37	61	32
Nevada	5	1	5	0	2	3	1	0	2	0
New Hampshire	5	1	4	0	2	3	2	1	3	1
New Jersey	4	0	2	0	0	2	1	0	2	0
New Mexico	7	0	6	1	6	1	2	0	2	0
New York	25	3	23	1	9	16	9	5	12	3
North Carolina	7	4	7	5	4	9	5	3	3	3
North Dakota	47	3	35	10	34	17	16	20	39	4
Ohio	61	4	42	21	21	41	22	11	39	5
Oklahoma	41	1	32	9	21	20	24	12	30	10
Oregon	7	2	8	0	7	0	5	1	5	0
Pennsylvania	19	2	18	9	10	27	11	4	15	2
Rhode Island	0	0	1	0	0	1	0	0	0	0
South Carolina	8	3	9	1	1	10	3	3	3	0
South Dakota	40	1	23	7	26	7	7	4	27	2
Tennessee	28	4	23	5	10	17	14	3	6	0
Texas	47	0	54	20	41	34	45	25	46	13
Utah	10	0	7	2	7	2	5	2	5	0
Vermont	5	0	4	1	4	2	0	3	3	0
Virginia	30	1	19	9	14	13	11	5	19	2
Washington	9	0	6	1	2	5	4	1	3	1
West Virginia	17	3	12	7	4	11	5	6	11	4
Wisconsin	41	3	29	6	15	27	18	10	31	4
Wyoming	10	2	8	4	9	1	4	2	7	2
Total	1,257	103	999	325	672	678	638	372	836	210

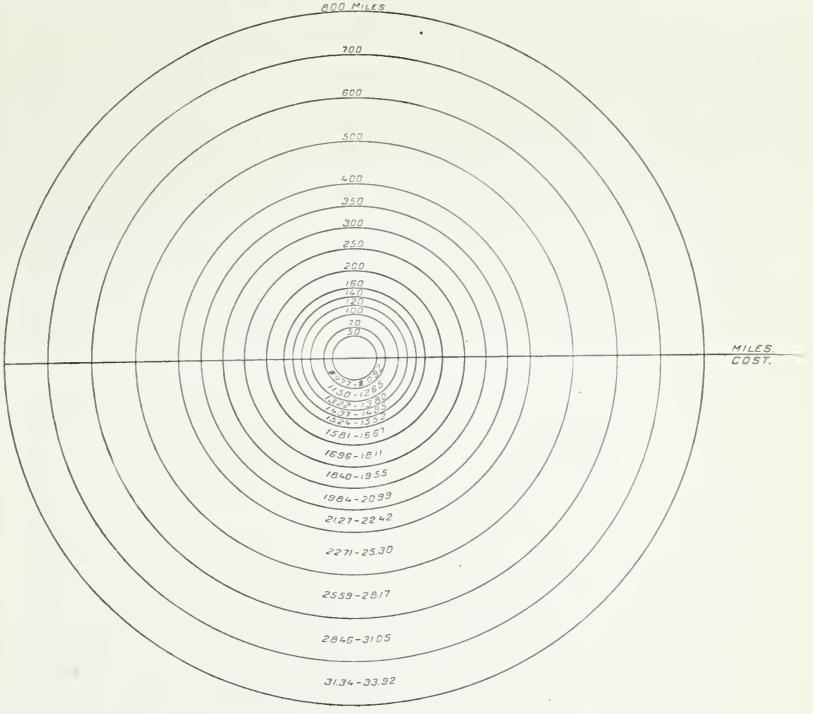


FIG. 1.—REPRESENTATIVE FREIGHT RATES PER HUNDRED POUNDS ON CARLOAD SHIPMENTS OF HOGS AND CALVES IN SINGLE-DECK CARS.

FIG. 2.—REPRESENTATIVE FREIGHT RATES PER HUNDRED POUNDS ON CARLOAD SHIPMENTS OF SHEEP AND GOATS IN SINGLE-DECK CARS.

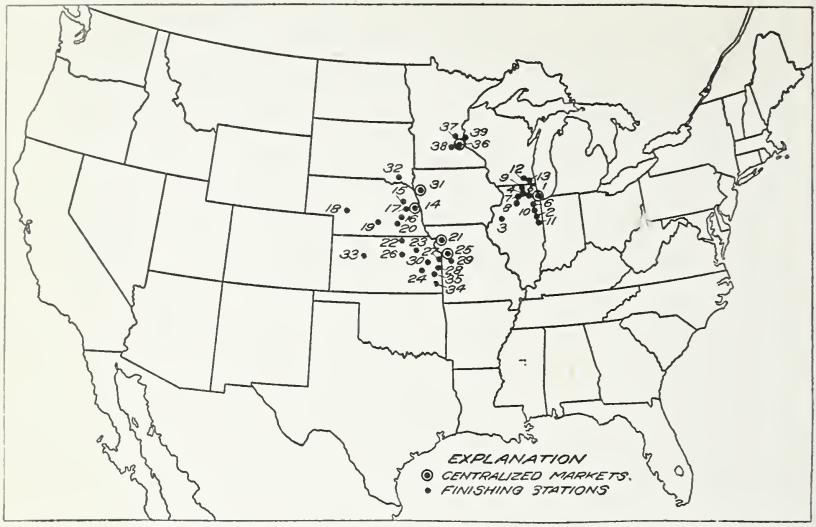


FIG. 1.—FINISHING-IN-TRANSIT STATIONS.

FIG. 2.—CENTRALIZED LIVE-STOCK MARKETS.

LOADING AND BEDDING CARS.—The cost of loading live stock includes the labor involved and the price of bedding. Data furnished by the correspondents mentioned above indicate that bedding material is furnished and placed in the car in 35 per cent of the instances recorded; and in 45 per cent of the cases reported a charge is made for this service, varying from 25 cents to $2 per car. The kinds of bedding material and the relative extent to which they are used, as indicated by the replies in which they are mentioned, are shown in Table 18.

TABLE 18.—*Kinds of bedding used in shipping live stock and percentage of replies mentioning each.*

Kind of bedding.	Per cent.	Kind of bedding.	Per cent.	Kind of bedding.	Per cent.
Straw	24.7	Cinders	7.4	Pine straw	0.6
Sand	20.8	Shavings	6.9	Manure	0.4
Sawdust	18.7	Dirt	1.7	Fodder	.10
Hay	8.6	Gravel	1.6		
No bedding used	7.8	Coal	0.7		

A study of the cost of loading live stock indicates that the average cost of loading cattle in cars is approximately $1, hogs approximately $2, and sheep $1.50 per car. These figures represent the labor of loading and include feed only in the case of hogs. They do not include the expense of incidental repairs to cars or of inserting partitions.

The number of animals loaded per car has been computed from the number of head and number of cars of different classes of live stock received at various markets. The average numbers are shown in Table 19:

TABLE 19.—*Average numbers of animals per car received at different markets.*

Location of market.	Period covered.	Cattle.	Calves.	Hogs.	Sheep.	Horses and mules.
Birmingham, Ala	January–March, 1916	44	.....	85	.....	.....
Chicago, Ill	All of 1915	22	106	76	187	19
Denver, Colo	do	33	105	77	261	35
Fort Worth, Tex	do	30	88	83	159	18
Kansas City, Mo	do	26	304	82	220	21
New York, N. Y	January–March, 1916	18	77	180	204	21
Spokane, Wash	do	24	.....	89	232	22

It will be noted that the number of cattle per car is greatest in the South and greater in the West than at middle Western and Eastern points. Variations in these figures on calves, hogs, and sheep doubtless are due partly to the use of double-deck cars, and for this reason direct comparisons are not possible; nevertheless the figures are of general interest.

FEEDING IN TRANSIT.—When the distance is such that the shipment to destination can not be made under 36 hours, according to the amended Federal 28-hour law, the animals must be unloaded, fed, and watered. The railroads which have the heaviest long-distance shipments provide feeding-in-transit stations for this purpose at intervals along their lines. The charges for care, feed, and water at

these points run as high as $10 or $12 per car, with a general average of about $5 per car. For the most part, the railroads which do a small live-stock business are without regular feeding-in-transit stations; on these lines the shipper must make his own arrangements for feed and water. In such cases, the railroad makes no charge, and the cost of caring for the animals varies with the amount of feed and labor bought by the owner. A few of these railroads have stations where men are furnished to assist in the unloading, loading, and caring for the stock; 50 cents per car is the usual charge for such service, to which should be added the cost of the feed purchased by the owner.

In addition to the feeding-in-transit stations, finishing-in-transit points are found in the Middle West, near the centralized live stock markets. They usually are equipped with large, well-arranged stock yards, similar to those at the centralized markets. They are used both for finishing animals for advantageous marketing and as a place where animals may be kept in good condition while awaiting a favorable turn in the market. These stations are used principally for sheep and are an important factor in regulating their supply on the market.

An ordinary finishing station represents an investment varying between $300,000 and $400,000, and includes shed capacity for about 50,000 sheep, with open yard space for 20,000 to 30,000 more. In addition, there are usually from 1,000 to 2,000 acres or more of grass land fenced in small pastures for use during the grazing season. The rapid increase in the use of these yards has resulted in many cases in the addition of facilities for shed feeding, grazing, shearing, and dipping of stock.

Stay of stock at these stations varies from 48 hours to 90 days, with an average of approximately 20 days. The profits of the plant come from the sale of feed, the charge averaging from 90 cents to $1.25 per sheep for a 20-day feed, and between 5 cents and 6 cents per head per day for a shorter period. The charge usually made for grass is from 1½ to 2 cents per head per day.[1]

The accompanying map of the United States shows certain of the centralized markets and the locations of such of these finishing-in-transit stations as have come to the attention of this office. (Pl. IV, fig. 1.)

Loss and damage.—Claims for loss and damage in transit on the great volume of live stock business reach large amounts in the aggregate.

Twenty-seven railroads, aggregating about 35 per cent of the total owned mileage of the country, reported to this office their total claims paid on live stock during the fiscal year 1913–14. The total amount of these claims was $1,245,477.81, or 4.81 per cent of the revenue on this class of business. Thus it will be seen that during that period these railroads paid out almost 5 per cent of their live stock earnings for loss and damage. On the other hand, since the valuation in live stock contracts in 1913 and 1914 did not cover more than about half the value of the stock, the return was not equal to the loss, even if the shippers recovered full contract valuation.

[1] United States Congress (64th), House Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats and Related Matters (1916), p. 80. For additional information see pp. 21–26, 76–82.

An actual count of dead stock removed from cars at Chicago as made by the Bureau of Animal Industry for a period of two years showed this class at that point to be 0.04 per cent of the receipts of cattle; 0.61 per cent of the calves; 0.19 per cent of the sheep; and 0.41 per cent of the hogs.

The Interstate Commerce Commission ordered all the railroads having a gross revenue exceeding $1,000,000 to report on the extent and causes of loss and damage claims paid by them on various commodities during the year 1914. The results of these special reports are included in the Twenty-ninth Annual Report of the Commission. Table 20 is computed from the reports on the causes of loss and damage claims paid on live stock.[1]

TABLE 20.—*Causes of loss and damage claims paid on live stock by railroads in 1914.*

Classification of loss.	Percentage of total live stock claims.	Classification of loss.	Percentage of total live stock claims.
Delays	38.76	Fire	1.57
Unlocated damage	21.14	Concealed damage	.11
Rough handling of cars	19.28	Robbery	.08
Wrecks	8.70	Improper ventilation	.02
Errors of employees	3.54	Concealed loss	.01
Unlocated loss	2.74		
Improper handling and loading	2.17	Total	100.00
Defective equipment	1.88		

The Interstate Commerce Commission does not undertake to trace the responsibility for the losses, but from Table 20 it would seem that 73.73 per cent of the total claims paid is chargeable to the transportation companies, 2.17 per cent to the shippers, and 24.1 per cent to either, according to circumstances.

As an indication of the variation in efficiency of railroads in the handling of live stock traffic, figures obtained by this office from the railroads show the amount of live stock claims paid to be as high as 19 per cent of the revenue in come cases, and in others less than 0.5 per cent. Table 21 shows the average claims paid per car of live stock handled by two of the principal live-stock-carrying railroads, whose reports show widely varying efficiency.

TABLE 21.—*Average claims paid per car of live stock hauled.*

Railroad.	Cattle.	Hogs.	Sheep.	Horses and mules.	All kinds.
Railroad No. 1	$0.64	$0.37	$0.55	$3.14	$0.61
Railroad No. 2	2.20	1.34	1.78	7.73	2.07

Of the replies to the question "Are railroad claims settled satisfactorily?" 63.2 were affirmative and 36.8 negative. The majority of the negative replies came from the principal live stock producing States.

[1] United States Interstate Commerce Commission. Twenty-ninth Annual Report (opposite p. 44).

Shrinkage.—At present very little is known regarding the shrinkage of live stock in transit. The settlement of most railroad live stock claims involves shrinkage estimates, and freight charges at 85 per cent of the large centralized live stock markets are based upon sale weights minus a stated amount of shrinkage. The amounts of shrinkage allowed are practically uniform at all markets, but they are the result of trade custom and are not determined by an analysis of the factors involved.

The most extensive investigation of the shrinkage of live stock in transit that has yet been made was conducted by the Bureau of Animal Industry. The percentages of shrinkage in Table 22 were compiled from the results of this investigation.[1] The available figures for shrinkage of hogs and sheep are not based upon a sufficient number of shipments to warrant publication.

Table 22.—*Shrinkage of beef cattle in transit.*

Time in transit and class of cattle.	Shrinkage.[a]	Time in transit and class of cattle.	Shrinkage.[a]
Less than 24 hours:	*Per cent.*	From 30 to 48 hours:	*Per cent.*
Range cows	3.58	Cottonseed-meal steers	5.40
Mixed range cattle	2.14	From 36 to 72 hours:	
Mixed corn-fed cattle	3.91	Range steers	5.40
Mixed silage-fed cattle	2.05	Range cows	4.84
Less than 36 hours:		Mixed range cattle	3.88
Range steers	3.65	Over 72 hours:	
From 24 to 36 hours:		Range steers	5.47
Range cows	3.46	Range cows	3.96
Mixed range cattle	6.37	Mixed range cattle	7.00
Mixed corn-fed cattle	4.11	From 60 to 120 hours:	
Mixed silage-fed cattle	3.57	Beet-pulp cattle	5.40

[a] Based on live weight at origin and "filled" weight at market.

In a concise and pertinent statement of the problems of live-stock transportation from a railroad man's point of view recently made by the general live-stock agent of one of the prominent western railroads, at the hearing conducted by this office,[2] the following subjects were especially emphasized: (1) Unequal distribution of cattle receipts at market points; (2) compliance with 28 to 36 hour Federal statute; (3) law respecting continuous duty of train crew; (4) overloading; (5) operating stock pick-up trains on time-card schedule.

Centralized Live-Stock Markets.

The largest single factor in the marketing of meat animals in the United States is the system of centralized live-stock markets, which has no counterpart in any of the other live-stock-producing countries of the world. Its development has been due primarily to the fact that the live-stock industry is developed mainly in the central and western parts of the country, while one-half the population is in the manufacturing region east of the Mississippi and north of the Ohio and Potomac Rivers. The exportation of meat animals and meat products from Atlantic ports also has contributed largely toward the centralization of live-stock markets at points intermediate between these ports and the areas of production.

[1] Ward, W. F., The Shrinkage in Weight of Beef Cattle in Transit. U. S. Dept. of Agr. Bul. No. 25, 1913, pp. 73, 74.

[2] United States Congress (64th), House Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats and Related Matters (1916), pp 18–21.

Other factors which have exerted a like influence are—

Rapid extension of railroads, facilitating the shipment of stock from grazing and feeding areas; the application of refrigeration to the shipment of fresh meats, cutting down the cost of distribution by the reduction of bulk and shrinkage, besides making it possible to deliver meats to more distant points and in better condition than when shipped on foot; the invention of the tin can and its adaptation to the preservation of meats and meat products in such form as to permit their convenient carriage in perfect condition to the Equator or the Poles; scarcity of labor in live-stock-producing sections and concentration of laboring classes at railroad centers, thus attracting slaughtering industries to the latter; and demand in consuming centers for high-grade meats, attractively dressed and carefully prepared in sanitary plants under official inspection.[1]

A corollary of the unprecedented development of our centralized markets which generally is regarded as of vital importance is the gradual concentration of ownership and control of the stockyards, terminal facilities and other equipment and related interests into the hands of the small group of packers who purchase the bulk of the meat animals sold at these markets. The nature and extent of this factor in the situation have been stated by Mr. A. E. de Ricqles, chairman of the committee on stockyards, of the American National Live Stock Association, at a hearing conducted by this office, as follows:[2]

The first thing that one meets in looking into this subject is the fact that the ownership of practically all the stockyards companies, all the big packing houses, the cattle loan companies, stockyard banks, rendering works, and similar institutions found at stockyards, are owned and controlled by four or five individuals; and as these stockyards are what establish the price of live stock in the United States, it follows quite naturally that these few individuals who own these institutions are in position to control. For a number of years these individuals—and it is no harm to mention their names, for they are so familiar to all of us that they come into our minds immediately, namely, Armour, Swift, Morris, Cudahy—were satisfied with the packing-house business and limited their operations to slaughtering and selling meat animals and their products; however, within the past dozen years they have been acquiring the stockyard companies, establishing cattle loan companies, and other market enterprises that, as a matter of fact, are distinct and separate from the slaughtering business. They own stockyards at Kansas City, South Omaha, East St. Louis, St. Joseph, Sioux City, St. Paul, Oklahoma, Fort Worth, Portland, and Denver.

It seems reasonable that the company buying your product on the open market should not be the owner of the facilities you use to prepare the same for its purchase; or that the man who sells your product should not be indebted and under obligations to the man who buys it; or that a stockman who borrows money should not borrow money for feeding from the man he must sell to.

For controlling prices and increasing the power of price making, the ownership of a stockyards by a packing house is one of the most complete means. For example, a live-stock commission firm established at a stockyards rents its office from the stockyards company, has its pens allotted to it by the stockyards company, and all the little services necessary for the live stock that such a commission firm may sell has to be done by the stockyards company. That is the province of the company; however, if the yard company fails to do these things in a good and workmanlike manner and is careless and does not keep its pens clean or its offices in good condition, or fails to furnish good hay or enough men to yard the cattle or is dilatory, in event of such a yard company being owned by some outside interest the commission company can go and demand from such a yard company the immediate correction of such poor service and abuses, and is listened to. But if the owners of the yard company are the same people who buy the cattle every day from the commission company and who finance the commission firm through a cattle-loan company or bank, the situation becomes very different, for the commission merchant must be on good terms with the people who buy from him, and he fears if he is not friendly with them that they may discriminate against him. So he hesitates to object when

[1] Hall, L. D., Great Central Markets for Live Stock and Meats. Address delivered at Second Pan American Scientific Congress, Section III, subsection 7, Washington, D. C., Dec. 30, 1915.

[2] United States Congress (64th), House Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats and Related Matters, 1916, pp. 46, 47.

things do not go just as they should, and is therefore not such a good salesman for his customer, nor is he able to do so much for him as if he was unhampered and free to go to the stockyards manager and ask for improvement in service and otherwise. This is just an explanation of one situation that to-day exists at most of the markets in the United States, and it is realized not only by the commission men and buyers in the yards, but it is understood by the stockmen, and it is becoming intolerable.

The principal remedies which have been advanced and advocated for the improvement of these conditions were summarized by Mr. T. W. Tomlinson, secretary of the American National Live Stock Association, at the above-mentioned hearing, as follows:[1]

(1) A more even distribution of receipts on five days of the week. This would prevent delays at terminals and enable the business to be transacted at less expense.
(2) A weekly publication by the Government of data as to the meat supply on hand.
(3) The establishment of public abattoirs in connection with public stockyards.
(4) Slaughterers to relinquish so far as possible their interest in and control of stockyards and other instrumentalities involved in the marketing of live stock.
(5) Commission houses not to serve as both seller and buyer of the same stock, and to sell direct to country purchasers.
(6) Federal and State supervision of the methods and practices at the central markets.
(7) A greater cooperation toward the end of securing unrestricted competition.

The limits of this report preclude a detailed consideration of various important problems pertaining to the centralized markets. For example, the congestion of live stock receipts on two days of the week at some of the larger markets is a condition which all agree is detrimental to the interests of everyone concerned. Computation on daily receipts at Chicago in 1915 show that about 42 per cent of the cattle were received on Mondays, 10 per cent on Tuesdays, 33 per cent on Wednesdays, 10 per cent on Thursdays, 4 per cent on Fridays, and less than 1 per cent on Saturdays.[2] In other words, more than three-fourths of the cattle received at that market arrive on Mondays and Wednesdays. A similar, though less marked, condition obtains with respect to hogs and sheep. The average proportion of hog receipts on the different week days at Chicago in 1915 was as follows: Monday 24, Tuesday 14, Wednesday 22, Thursday 17, Friday 15, and Saturday 8 per cent. Sheep receipts on Monday averaged 24 per cent, Tuesday 17, Wednesday 23, Thursday 19, Friday 13, and Saturday 4. For calves, the averages were: Monday 16, Tuesday 33, Wednesday 24, Thursday 20, Friday 6, and Saturday less than 1 per cent. The heavy traffic on Mondays and Wednesdays as shown by these figures results in delays, price fluctuations, and other disadvantages incident to the handling of such a large volume of traffic in such a limited time.

Statements recently obtained by the Department from 1,046 correspondents in all parts of the United States relative to market service, such as yardage, feeding, and commission, indicate that 80 per cent of the total number who replied consider the service satisfactory, while 20 per cent replied in the negative. (See Table 17.) It is significant, however, that in some of the principal stock-feeding States, especially Iowa, Kansas, and Nebraska, about one-third of the replies were unfavorable.

[1] United States Congress (64th), House Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats and Related Matters, 1916, p. 17.
[2] United States Department of Agriculture, Bureau of Crop Estimates, Monthly Crop Report, vol. 2, No. 1 (1916), p. 6.

TABLE 23.—*Estimated numbers of animals slaughtered in the United States in comparison with receipts at stockyards, 1915.*

Kind of animals.	Number of stockyards.	Number of animals received.	Total number slaughtered in United States.[1]	Stockyard receipts as a percentage of total number slaughtered in the United States.
Cattle and calves	43	14,025,763	19,012,435	75
Hogs	42	35,130,255	59,099,622	60
Sheep	43	17,139,166	14,022,649	120

[1] The numbers of animals slaughtered in 1915 were computed from the total numbers of animals reported by the Bureau of Crop Estimates Jan. 1, 1915, and the percentage of each class of animals slaughtered in 1909 according to the Thirteenth Census.

The numbers of animals reported in the receipts of the stockyards are materially larger than if the animals actually appearing at these markets were counted but once. This duplication is due largely to the movement of thin animals back to the country as stockers and feeders, which are returned to the markets after being fed or grazed; and to the feeding of animals in transit at some of the far western and eastern markets. Some duplication also results from the forwarding of animals from the first market to which they were consigned, to some other market, in the hope of receiving better returns. The necessary allowance for these factors is greatest in the case of sheep and is least with respect to hogs. Notwithstanding these factors, the large proportion of the total slaughter shown above indicates that the centralized live stock markets constitute the predominating system in this country.

Besides the concentration of live stock for slaughtering purposes, the centralized markets are the medium through which a large proportion of stocker and feeder animals are bought. From data collected by means of questionnaires sent to correspondents of the Bureau of Crop Estimates, it has been estimated that 55 per cent of the stocker and feeder cattle purchased are bought in the district in which they are fed or grazed, 27 per cent at the centralized markets, and 18 per cent in the country, other than locally. The figures for stocker and feeder sheep indicate 47 per cent to be bought locally, 39 per cent at the centralized markets, and 14 per cent at other points.

Public stockyards are operated at numerous points in most of the sections of the United States. A thorough canvass of these establishments has been made, and monthly reports of live stock receipts and shipments are being furnished to this office by stockyards in the 53 cities shown in Plate IV, figure 2. Detailed investigations relative to facilities, organization, and charges also have been made in person at 36 of these places, including all of the larger markets.

CHARGES FOR MARKET FACILITIES AND SERVICE.

The terminal facilities at all the centralized live stock markets which do a large volume of business are operated either by a traffic department of the stockyard company or by a terminal railroad company. The stockyard companies at all of the large markets are either directly or indirectly owners and operators of the terminal equipment. At the smaller markets where this is not true the

facilities are owned and operated by one or more large railroad companies, or by a joint holding or joint operating company composed of two or more of the railroads entering the city in which the market is located.

At almost all of these markets the terminal companies make a switching charge for the use of the terminal facilities. This fee is paid finally by either the railroad or the shipper of stock. The amount of the terminal switching charge usually paid by shippers is $2 per car. In addition to this charge, some of the railroads at certain of the markets pay the terminal company a trackage fee, but in all of the instances reported to this office these charges are absorbed by the railroads.

Most of the large markets have an unloading and loading charge averaging approximately 50 cents for each service, but this in the majority of cases is assessed only on through shipments stopped for feed and water and generally is absorbed by the railroads.

Dock men of the stockyard company unload the stock and place the animals in pens adjacent to the unloading platforms. The stockyard company also is supposed to drive the animals to the pens of the commission companies, but in practice the commission firms often do their own yarding. The maximum, minimum, and usual charges made for this service are shown in Table 24.

TABLE 24.—*Stockyards: Yardage charges per head.*

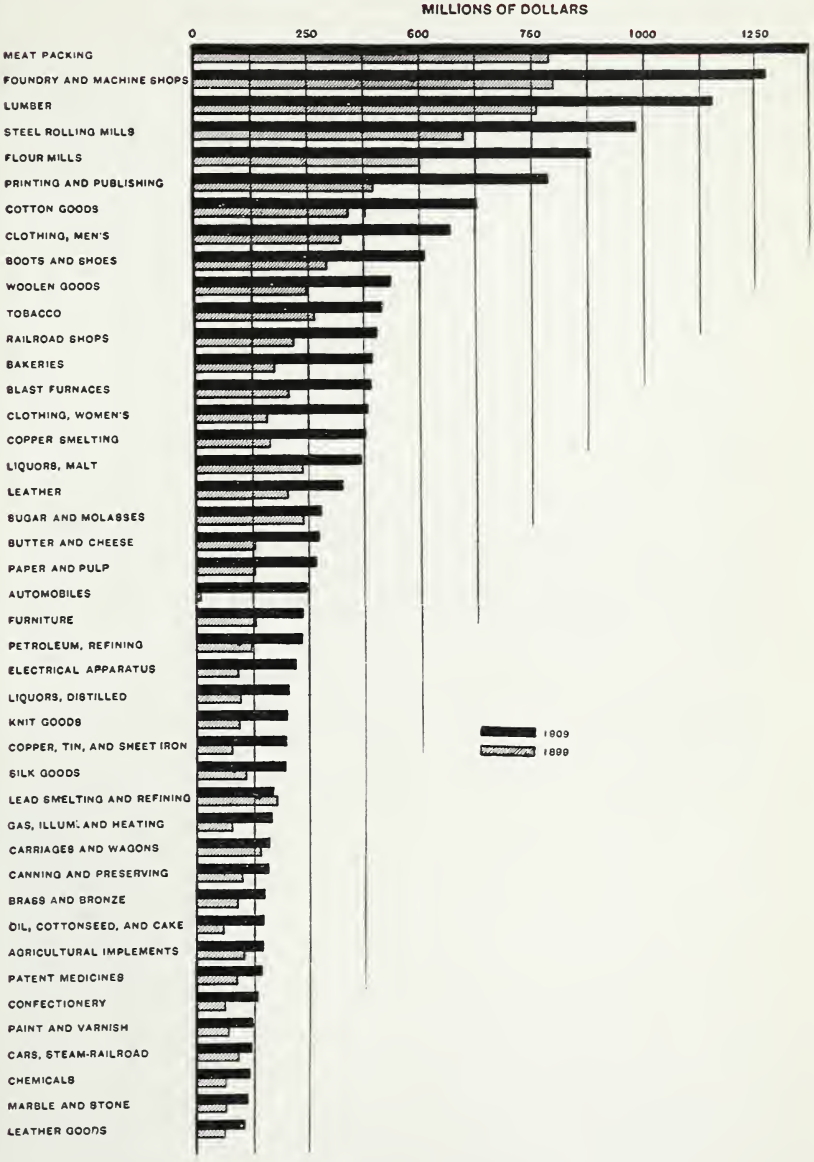
Kind of animal.	Maximum.	Minimum.	Usual.
Cattle	$0.45	$0.06	$0.25
Calves	.25	.06	.10
Hogs	.08	.03	.08
Sheep	.06	.02	.05

The minimum yardage charge on every class of stock, except calves, occurs at yards owned and operated by railroad companies; and besides the per head yardage charges here given, a few of the markets have a maximum yardage charge based upon a carload. The usual charge at those markets which quote a car rate for yardage is $8 per car on cattle, calves, and hogs, and $10 on sheep.

The range of charges for feed at the various markets is presented in Table 25.

TABLE 25.—*Stockyards: Feed charges.*

Kind of feed.	Maximum.	Minimum.	Usual.
Corn, per bushel	$2.00	$1.00	$1.25
Oats, do	1.00	.75	.75
Wheat, do	1.50	1.50	1.50
Barley, do	1.20	1.20	1.20
Native hay, per hundredweight	2.00	1.00	1.50
Timothy hay, do	1.75	1.25	1.50
Prairie hay, do	1.25	1.00	1.00
Clover hay, do	1.50	1.25	1.50
Alfalfa hay, do	1.50	1.00	1.25
Mixed hay, do	1.50	1.25	1.50
Straw, do	1.50	.80	1.00



VALUE OF PRODUCTS FOR LEADING INDUSTRIES, 1909 AND 1899.

From United States Census, Bureau of, Thirteenth Census of the United States, Vol. 8, Manufactures. General report and analysis, p. 44.

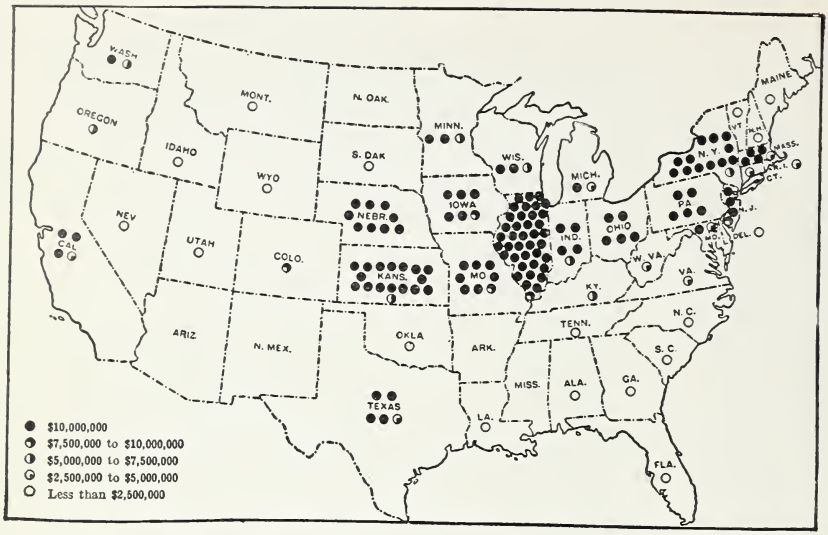


FIG. 1.—VALUE OF PRODUCTS OF WHOLESALE SLAUGHTERING AND MEAT PACKING BY STATES, 1909.

From United States Census, Bureau of, Thirteenth Census of the United States, Vol. 10, Manufactures. Reports for principal industries, p. 337.

FIG. 2.—MUNICIPAL ABATTOIRS.

Commission charges for selling stock are shown in Tables 26, 27, and 28.

TABLE 26.—*Stockyards: Commission charges per head.*

Kind of animal.	Maximum.	Minimum.	Usual.
Cattle	$1.00	$0.50	$0.60
Calves	.35	.10	.25
Hogs	.25	.10	.20
Sheep	.20	.10	.10

This table does not cover the commission charges of all markets, owing to variations in the basis of such charges in some instances. The charges for selling cattle at one market are based upon the value of the animal, being 50 cents per head of $20 value and under, 75 cents per head for a value between $20 and $35, and $1 per head for over $35. At three markets the commission charge on hogs is 2 per cent of the amount of the gross sales, while at a fourth market the charges are from 35 to 50 cents per head, according to the number sold. The commissions for selling sheep are as shown in Table 26, with the exception of one market, where the charges vary from 15 to 25 cents per head.

TABLE 27.—*Stockyards: Commission charges for single-deck car.*

Kind of animal.	Maximum.	Minimum.	Usual.
Cattle	$20.00	$6.00	$12.00
Calves	20.00	6.00	12.00
Hogs	20.00	5.00	8.00
Sheep	20.00	5.00	8.00

TABLE 28.—*Stockyards: Commission charges for double-deck car.*

Kind of animal.	Maximum.	Minimum.	Usual.
Calves	$36.00	$10.00	$18.00
Hogs	30.00	10.00	12.00
Sheep	30.00	10.00	12.00

The charges quoted for selling single and double deck cars of live stock apply to those containing the normal number of animals.

Five markets have a fee for weighing stock. Three of these charge 10 cents per head on cattle, one charges 25 cents per car on all kinds of stock, and one charges 5 cents per head on cattle, 1 cent on hogs, and ½ cent on sheep. Four of the markets having such charges are located in the eastern part of the United States and one in the South.

An inspection for the purpose of determining the dockage in weight on all sales of hogs involving "stags" and "piggy" sows is made by representatives of the live stock exchange. The usual fee is 15 cents per car, although the charges at different markets range by fives from nothing to 25 cents per car. The usual maximum dockage which is allowable is 80 pounds for "stags" and 40 pounds for "piggy" sows. At some markets hogs which have an abnormal development or diseased condition of some part are docked from 20 to 40 pounds.

Wholesale Slaughtering and Meat Packing.

The wholesale slaughtering and meat-packing industry constitutes the chief outlet for market stock suitable for slaughter. Its close relation to the large live-stock centers is shown by its geographical distribution as to value of products (Pl. VI, fig. 1) in comparison with the location of stockyards points illustrated by Plate IV, figure 2.

The most extensive development of meat packing is found in the same States which contain the principal stockyards. These stockyards are located at Chicago and Missouri River points. The prominence of the industry in Massachusetts, New Jersey, New York, and Pennsylvania, as shown by the map, is due largely to the shipment of live animals from western markets for slaughter at eastern cities. The value of packing-house products in 1909[1] reported from six of the principal States was as follows: Illinois, $389,594,906; Kansas, $165,360,516; New York, $127,130,051; Nebraska, $92,305,484; Missouri, $79,581,294; Iowa, $59,045,232. The corresponding figures for 1914[2] are: Illinois, $485,362,180; Kansas, $151,647,123; New York, $144,036,162; Nebraska, $104,503,333; Missouri, $91,608,121; Iowa, $74,171,865. Slaughtering and meat packing ranks first in value of products among all the manufacturing industries of the United States. This fact is strikingly shown by Plate V.

The growth of the industry during recent decades is indicated by the increase in value of products as set forth by the following figures:

Table 29.—*Value of products of wholesale slaughtering and meat-packing establishments in the United States.*[a]

Year.	Value of products.	Year.	Value of products.
1889	$564,667,035	1909	$1,355,544,431
1899	788,367,647	1914	1,651,765,424
1904	922,037,528		

[a] Figures for 1889, 1899, and 1904, from United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910; Manufactures, 1909. Statistics for the Slaughtering and Meat-Packing Industry, pp. 4, 16. Revised figures for 1909, and figures for 1914 from preliminary report of United States Census Bureau on the Slaughtering and Meat-Packing Industry for 1914 (July, 1916).

The number of wholesale slaughtering and meat-packing establishments in 1914, as reported by the Census Bureau,[2] was 1,279. Every State but North Dakota was represented. Establishments under Federal meat inspection December 31, 1914, numbered 824, or 65 per cent of the total. These plants were located in 230 cities in all but three of the States—Arizona, Montana, and New Mexico. The present number of federally inspected establishments is 799, and the only States not included are Montana and New Mexico.

Four principal classes of plants are engaged in different branches of the wholesale slaughtering and meat-packing industry, viz, those primarily engaged in (1) both slaughtering and meat packing, (2) meat packing, (3) slaughtering, (4) sausage manufacture. In the

[1] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910, Manufactures, 1909. Statistics for the Slaughtering and Meat-Packing Industry, p. 6.

[2] United States Census, Bureau of, Preliminary Report on the Slaughtering and Meat Packing Industry for 1914. (July, 1916.)

Census reports for 1909 the two first-named groups were combined, thus making three classes of establishments. Forty per cent of the establishments were engaged in slaughtering and meat packing, 35 per cent in slaughtering not including meat packing, and 25 per cent in the manufacture of sausage. Of the total value of products 88 per cent was reported by slaughtering and meat-packing establishments, 11 per cent by those doing slaughtering not including meat packing, and 1 per cent by sausage manufacturers.[1] Of the 1,279 establishments enumerated in 1914, 468, or 37 per cent, were engaged in slaughtering and meat packing, 630, or 49 per cent, were engaged in slaughtering not including meat packing, and 181, or 14 per cent, were engaged in packing only.

Of the federally inspected meat establishments in 1914, 325, or about 40 per cent, were engaged in slaughtering, and most of this number also conduct meat packing. The remainder includes, in addition to establishments engaged primarily in slaughtering, meat packing or sausage manufacture, numerous branch wholesale distributing houses connected with the larger packing concerns, and some other wholesale markets. These houses conduct processing, such as curing and smoking of meats, to be sold interstate. Besides these inspected establishments there are many branch houses and other wholesale meat concerns which do more or less processing and in some cases slaughtering for intrastate trade, but, not being engaged primarily in either of those branches, they are not included in the foregoing figures. Some of the largest packing companies, for example, have from 200 to 425 branch houses each, located in cities throughout the United States. The distribution of fresh beef from large packing plants through their branches is illustrated by the itemized accounts on lots 3, 5, 7, 8, and 9 (pp. 78 to 94), from which the following summary is presented (Table 30):

TABLE 30.—*Wholesale distribution of actual lots of beef.*

Lot No.	Number of cattle.	Where slaughtered.	Where distributed.
3	31	Chicago, Ill.....	Boston, Lynn, Mass.; Providence, R. I.; New York, N. Y.; Dover, N. J.; Wilmington, Del.
5	100	Kansas City, Kans.....	Tenth Avenue and Westchester, New York City; Sixth Avenue, and Wallabout Market, Brooklyn, N. Y.; Utica, Schenectady, Syracuse, N. Y.; Jersey City, Trenton, Newark, N. J.; Cleveland, Akron, Ohio; St. Paul, Minn.; Kansas City, Mo.
7	24	Portland, Oreg.....	Tacoma, Seattle, Spokane, Wash.; Portland, Oreg.
8	28	East St. Louis, Ill.....	Indianapolis, Fort Wayne, Ind.; Detroit, Mich.; Wheeling, W. Va.; Baltimore, Md.
9	27	Fort Worth, Tex.....	Dallas, Beaumont, San Antonio, Fort Worth, Tex.; New Orleans, La.; Memphis, Chattanooga, Tenn.; Louisville, Ky.; Atlanta, Savannah, Ga.; Norfolk, Richmond, Va.; Scranton, Pa.

Another important factor in the wholesale distribution of meats is the car-route or "peddler-car" system operated by the larger packers and some of the smaller ones. This system consists of the shipment to small cities and towns of packing-house products in refrigerator cars which are run on a regular schedule, usually weekly, and making one or more stops daily at designated places on the line. The routes are covered by traveling salesmen. One of the largest packing con-

[1] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910; Manufactures, 1909. Statistics for the Slaughtering and Meat-Packing Industry, p. 5.

cerns reports that it supplies 25,000 cities and towns in this way. Five to eight route cars a week are stopped at many points which obtain their wholesale meat supply from packing centers. The extent of the branch house and car-route trade also is indicated in part by the numbers of beef and refrigerator cars operated by the largest packers (Table 31):

TABLE 31.—*Beef and refrigerator cars owned and controlled by large packing interests, January, 1913.*[1]

Establishment.	Cars owned.	Establishment.	Cars owned.
No. 1	[2] 14,447	No. 6	515
2	6,767	7	203
3	2,111	8	26
4	1,576	9	25
5	1,544	10	9

[1] Interstate Commerce Commission Investigations, covered by Docket No. 4906.
[2] An official of this company states that about 7,000 of its refrigerator cars are used in the meat trade.

The total number of refrigerator cars reported in the United States in 1913 was in excess of 100,000. Of this number, about 38,000 were under private as distinguished from railroad ownership, and about 17,000 belonged to companies controlled by the railroads.[1] Thus about two-thirds of the privately owned refrigerator cars were controlled by the four principal packers, and nearly one-half were used chiefly in the meat trade.

The relative importance of the different classes of meat animals handled in wholesale slaughtering and meat-packing establishments is shown by the following comparison, which includes meats and other materials purchased by such establishments.

TABLE 32.—*Value of animals, meats, and other materials purchased by wholesale slaughterers and packers, 1909.*[a]

Animals and materials purchased.	Cost.[b]	Per cent of total cost.
Beeves	$392,127,010	32.60
Calves	25,030,014	2.08
Sheep and lambs	59,924,931	4.98
Hogs	483,383,848	40.19
Goats and kids	121,230	.01
All other animals	138,548	.01
Total animals	960,725,581	79.87
Dressed meat [c]	93,409,286	7.77
All other materials [c]	148,692,917	12.36
Total	1,202,827,784	100.00

[a] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910; Manufactures, 1909. Statistics for the Slaughtering and Meat-Packing Industry, p. 13.
[b] Preliminary reports of the United States Bureau of the Census for 1914 (July, 1916), show cost of animals as follows:

Beeves	$490,108,203
Calves	27,623,448
Sheep and lambs	84,783,721
Hogs	597,097,518
Goats and kids	29,345
All other animals	2,178,250
Total	1,201,820,485

[c] A considerable part of these items doubtless consists of interestablishment shipments, in which case duplication of costs is represented by the figures.

[1] White, G. C., Improved Transportation Service for Perishable Products. Address delivered before Second Pan-American Scientific Congress, Washington, D. C., Dec. 31, 1915.

A further comparison of the different classes of animals utilized by packing concerns is afforded by the following data from the Thirteenth Census and from a preliminary report of the United States Bureau of the Census for 1914 (Table 33):

TABLE 33.—*Numbers, weights, and yields of cattle, calves, sheep, and hogs purchased by wholesale slaughtering and meat packing establishments.*

Class of animals.	Number.	Weight on hoof.	Average weight on hoof.	Weight dressed.	Average weight dressed.	Average dressed yield.
1909.[1]		*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Per cent.*
Beeves	8,114,160	8,265,991,836	1,019	4,409,718,922	543	53.29
Calves	2,504,728	419,604,080	168	262,315,076	105	62.50
Sheep and lambs	12,255,501	987,566,521	81	496,640,869	41	50.61
Hogs	33,870,616	6,856,832,417	202	5,201,902,778	154	76.24
1914.[2]						
Beeves	7,149,042	7,076,145,687	989	3,786,382,167	530	53.59
Calves	2,019,004	337,565,316	167	206,311,127	102	61.07
Sheep and lambs	15,951,860	1,259,595,728	79	629,723,014	39	49.36
Hogs	34,441,913	7,277,670,937	211	5,476,236,776	159	75.35

[1] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910, Manufactures, 1909. Statistics for the Slaughtering and Meat-Packing Industry, p. 13.
[2] United States Census, Bureau of, Preliminary report on the Slaughtering and Meat-Packing Industry, 1914 (July, 1916).

Computations from the figures for 1914 show that approximately 54 per cent of the total dressed weight of meat handled by the establishments in question consists of pork, 38 per cent beef, 6 per cent mutton, and 2 per cent veal. The percentages of live weight obtained as dressed yield (right-hand column) are of interest as an indication of the average grade of stock handled by wholesale slaughterers and meat packers. Corresponding data from the report of the Twelfth Census (1900) give the following yields: Cattle, 54.5; calves, 63.8; sheep and lambs, 51.2; and hogs, 78 per cent.[1] The striking similarity in the tendency toward reduced relative yields is attributed chiefly to the marketing of meat animals at earlier ages. In only one instance is the percentage of dressed yield greater in the later year, viz, the difference between the dressed yield of beeves for 1909 and 1914 is 0.3 per cent.

[1] See Part I of this series of reports, p. 137.

The products of the slaughtering and meat packing industry as reported for 1914 by the Bureau of the Census, were valued as follows (Table 34):

TABLE 34.—*Value of products of slaughtering and meat packing in the United States.*[1]

Product.	Pounds.	Value.	Per cent of total value.
Fresh meat:			
Beef	3,658,333,660	$421,296,794	25.83
Veal	194,698,880	26,299,446	1.61
Mutton, lamb, goat, kid	629,232,690	74,675,627	4.58
Pork	1,877,099,071	226,535,734	13.87
Cured meat:			
Beef	91,571,753	14,395,316	.88
Pork	2,929,309,741	393,605,600	24.13
Canned goods	160,798,955	26,417,624	1.62
Sausage	509,151,311	68,195,522	4.18
Lard	1,119,188,675	120,414,007	7.38
Lard compounds and substitutes	396,397,950	33,037,467	2.03
Oleo oil	[2] 16,501,585	11,925,832	.73
Other oils	[2] 6,715,497	4,009,602	.25
Tallow and oleo stock	209,614,135	13,732,756	.85
Stearin	30,091,991	2,752,421	.17
Oleomargarine	60,387,881	8,818,557	.54
All other products [3]		185,076,874	11.35
Total	11,889,093,775	1,631,189,179	100.00

[1] United States Census, Bureau of, Preliminary Report on the Slaughtering and Meat-Packing Industry for 1914 (July, 1916).
[2] Gallons.
[3] Includes value of baked beans, confectionery, fertilizers, fertilizer materials, glue, head cheese, hides and skins, hog hair, ice, meat puddings, peanut butter, preserves, sausage casings, scrapple, wool, etc., and amount received for slaughtering and refrigeration for others.

Summarizing the proportions of the various products in the order of their importance, it is found that approximately 46 per cent of the total value represents fresh meats, 25 per cent cured meats, 7 per cent lard, 4 per cent sausage, 2.5 per cent various oils and fats, 2 per cent lard compounds, and less than 2 per cent canned goods.

The ratio of the cost of animals and other materials to the value of products is greater in the slaughtering and meat packing industry than in most other manufacturing lines, owing largely to the comparatively simple processes of preparation involved. The ratios shown by census reports are summarized in Table 35. Figures for 1914 are not yet available.

TABLE 35.—*Comparison of cost of materials and value of products of wholesale slaughtering and meat packing.*[1]

Year.	Cost of materials.	Value of products.	Ratio of materials to products.
			Per cent.
1889	$482,897,381	$564,667,035	85.5
1899	685,310,099	788,367,647	87.0
1904	811,425,562	922,037,528	88.0
1909	1,202,827,784	1,370,568,101	87.8

[1] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910, Manufactures, 1909. Statistics or the Slaughtering and Meat-Packing Industry, p. 5.

The nature of the resources of some of the largest establishments engaged in wholesale slaughtering and meat packing is indicated, in a general way at least, by their annual financial statements. While it would be difficult to determine the optimum proportions of the total resources which should be invested in physical equipment and operating capital, respectively, and although these proportions must vary in accordance with the organization and extent of the business, yet an analysis of the statements of some of the most successful concerns should be of interest and significance.

The total resources of the five largest meat-packing corporations in the United States, as given in their annual statements for the last fiscal year, ranged from approximately $39,000,000 to $207,000,000. The proportion of the total resources invested in land, buildings, machinery, and other equipment, as computed from these statements, varied from 25 to 28 per cent, excepting in one of the smaller concerns whose account on these items amounted to 42 per cent of its resources. Accounts receivable and bills receivable made up from 12 to 29 per cent of the total resources, being about 27 and 29 per cent, respectively, for the two largest corporations and from 12 to 16 per cent for the three smaller ones. The above figures on physical equipment included the refrigerator car lines of the various packers, which represented approximately 4 to 5 per cent of the total resources. The merchandise, supplies, and materials accounts made up from 19 to 36 per cent of the resources, being from 21 to 23 per cent in the case of the two largest and one of the smaller corporations and 37 per cent in the smallest one. The amount of cash on hand was from 4 to 7 per cent of the assets, being approximately 4 per cent in the two largest concerns and approximately 7 per cent in the two smallest ones. This indicates that approximately one-fourth of the resources of the two largest packing companies represented real estate and physical equipment, bills and accounts receivable, and merchandise and supplies, respectively; while in the three corporations next in size, the physical equipment and real estate account averaged about one-third of the resources, accounts and bills receivable about one-seventh, and merchandise and supplies about one-third. Considered in connection with similar figures representing small local packing plants (p. 58) this summary will serve as a general indication of the relatively large proportion of operating capital to physical equipment required in the wholesale meat-packing business.

Net earnings on net capital investment, as computed from the financial statements of these corporations for the fiscal year 1915, varied from 4.01 to 11.66 per cent. The net capital investment refers to the sum of the capital stock and surplus; and the net earnings on which the foregoing percentages are computed consist of net profits less interest, taxes, depreciation, and administrative expense. Although taken from the published statements of the corporations in question without further verification, the figures are of general interest and significance in this connection.

It is interesting to note also that the various corporations rank in the same order with respect both to total resources and to per cent age of net earnings on net capital investment, indicating that the larger the volume of business the more profitable the industry has been. To what extent this advantage on the part of the larger companies is due to their operations in other countries it is impossible to state

from the data at hand, but it is understood that this factor was an important one during the fiscal year in question.

The surplus accounts shown in the last annual statements of these five corporations were as follows in the order of their total resources: $45,850,000; $98,733,116.73; $7,514,062.17; $29,510,270.51; and $6,050,270.50, respectively. Although these amounts are not directly comparable, owing to differences in the periods of time they represent, and differences in the financial policies of the various concerns, and in the products other than meats which some of them handle in large volume, nevertheless the surplus shown in proportion to total resources in each instance indicates that the large meat-packing and allied industries have been highly profitable during the comparatively short period since their organization.

Definite conclusions relative to the aggregate profits that have been made directly and indirectly from the packing business would require more comprehensive and thorough investigations than yet have been conducted. Such investigations would have to include not only a study of all the elements of cost and profit in the packing business proper but also those involved in all the allied industries, including the relation of individual interests to those of corporations engaged in the industry, and the foreign as well as domestic operations of American packing concerns.

Comprehensive and fully confirmed figures on the cost of operation in the meat-packing industry are not available, but the following data afford an approximate index to certain phases of the industry. Table 36 shows the items entering into the plant expense of the beef department in one of the larger packing houses at Chicago. This statement covers the buying of the cattle, slaughtering, dressing, chilling and loading the beef on refrigerator cars for shipment to branch houses. It represents the packing company's account on one of its larger plants for one month during which period 9,963,300 pounds of dressed beef were handled.

TABLE 36.—*Plant expenses of beef department in large packing house (September, 1914).*

Item of expense.	Amount of expenses.	Expense per hundredweight dressed weight.	Item of expense.	Amount of expenses.	Expense per hundredweight dressed weight.
Labor	$12,048.42	$0.121	Depreciation	$4,573.10	$.046
Supplies	2,365.13	.024	Plant administration	2,308.85	.023
Repairs	1,139.39	.011	Casualty	446.77	.004
Icing	11,141.00	.112	Racks	66.81	.001
Operating	2,139.80	.021	Total plant expense	38,106.30	.382
Teaming	945.00	.009	Live-stock buying	2,857.62	.029
Railroad	397.80	.004	General administration	8,254.00	.083
Freezer storage	150.38	.002	Selling	8,651.75	.087
Laundry	101.30	.001	Miscellaneous	528.82	.005
Laboratory	13.60	.....			
Insurance and taxes	268.95	.003	Grand total	58,398.49	.586

The cost of operation of a typical packing house branch market in New York for one month, is shown by Table 37. These figures were furnished by the same concern as those shown in Table 36 and represent the reported cost of selling 668,899 pounds of meat products.

TABLE 37.—*Expenses of branch house of large packing company (September, 1914).*

Item of expense.	Amount.	Item of expense.	Amount.
Pay roll, except labor	$1,282.58	Refrigeration	$200.00
Light	24.16	Telephone	22.95
Car fare	20.05	Depreciation	4.92
Postage	30.00	Tax	124.00
Telephone tolls	14.30	Interest	185.85
Stationery	9.77	Casualty insurance	5.29
Teaming	280.55	Sundries	234.02
Discounts	3.06		
Rent	589.96	Total expense	3,485.35
Branch house general expense	390.89	Expense per hundredweight	.52
Suspense	63.00		

As indicating the relation between volume of business and expenses in wholesaling meats, the following statements relative to sales and expenses in four typical branch houses are furnished by one of the large firms:

TABLE 38.—*Volume of business and expense of handling at four branch houses.*

Branch house.	Weight of meats sold (pounds).	Value.	Amount of expense.	Expense per hundredweight.
1	424,294	$61,833.94	$3,751.81	$0.86
2	231,706	33,495.32	1,850.01	.79
3	668,899	83,147.29	3,485.35	.52
4	2,209,402	289,281.78	8,737.61	.39

Concentration, largely into the hands of five corporations, of the ownership and control of slaughtering and meat-packing facilities in the United States constitutes one of the most striking features of the industry and likewise one of the most common causes of complaint on the part of meat producers on the one hand and consumers on the other.

The sentiment of stockmen on this subject recently has been expressed in an official statement by the secretary of the American National Live Stock Association as follows:[1]

> We believe that the present volume of the operations of the big packers and their control of the instrumentalities of marketing is fraught with danger to the producer, to the consumer, and even to the packer, and that any enlargement of their sphere of influence over so important an article of food would prove a more serious menace to this country. Any further centralization of the meat industry in the hands of fewer people would give them a greater control over prices—a power and responsibility which they should seek to avoid for fear of its abuse. Live stock commission men claim there is less competition on the various markets than ever before. This is because of the elimination of many competitive slaughtering plants and therefore fewer buyers.

Similar expressions on the part of commission men, retail meat dealers, and others are contained in the document from which the above statement is quoted. The extent to which such concentration exists may be expressed in various terms.

Of the total number of establishments reported to the Census Bureau in 1909, approximately 48 per cent were owned by indi-

[1] United States Congress (64th), House Document 855. Proceedings of the Conference relative to the Marketing of Live Stock, Distribution of Meats, and Related Matters (1916), p. 16.

viduals, 22 per cent by firms, and 29 per cent by corporations. Of the total value of products, however, approximately 89 per cent were reported by corporations, 6 per cent by firms, and 5 per cent by individuals. The relative value of packing house products handled by corporations increased from 86 per cent in 1904 to 89 per cent in 1909. The Census figures for 1914 will be available shortly.

The percentage of meat animals bought at the centralized live-stock markets by the large packers is another indication of the extent of their control of the industry. It was found by the Commissioner of Corporations[1] in 1904 that approximately 98 per cent of all the cattle killed in the eight leading western packing centers were slaughtered by the large packing interests. It was estimated also that about 45 per cent of the number of cattle slaughtered in the United States during 1903 were handled by the same group of packing interests. More recent official figures on this subject are not available and satisfactory estimates relative to hogs and sheep have not been made.

The percentage of the total meat supply sold by the large packers in various cities affords another index of the extent of their control. Table 39 shows the proportions of the beef supply in the cities named, as determined in 1904 by the Commissioner of Corporations and in 1916 by the Office of Markets and Rural Organization.

TABLE 39.—*Estimated proportions of fresh beef used in specified eastern cities supplied by the five large packers.*

City.	1904 *a*	1916 *b*	City.	1904 *a*	1916 *b*
	Per cent.	*Per cent.*		*Per cent.*	*Per cent.*
Albany	.....	80	Harrisburg	.....	60
Baltimore	50	60	Newark	.....	90
Boston	85	95	New York City	75	90
Buffalo	17	45	Philadelphia	60	75
Cincinnati	25	10	Pittsburgh	67	85
Cleveland	33	40	Washington, D. C	.....	95
Columbus	.....	50	Wheeling, W. Va	.....	20

a United States Commissioner of Corporations, Special Report on the Beef Industry, 1905, pp. xxi, 66–70.
b Estimates obtained by Office of Markets and Rural Organization.

It is noted that the New England cities are almost entirely dependent upon the large packers for their beef supply, while some of the cities farther west are supplied to a large extent by local slaughterers.

Estimates of locally dressed beef which is consumed in specified cities range from 8 per cent to 85 per cent of the total beef consumed in those cities. From 8 per cent to 15 per cent was locally dressed in Boston, Washington, and New York City; from 22 per cent to 50 per cent in Pittsburgh, Jersey City, Albany, Columbus, Philadelphia, and Baltimore; and from 60 per cent to 85 per cent in Newark, Wheeling, Cleveland, and Cincinnati. In many of the cities named slaughtering is conducted by one or more establishments which are owned or controlled by the large western packing interests.

On the whole, it is apparent that the large packing interests exercise an increased and increasing degree of control over the industry and that effective means should be sought whereby this concentration of ownership and control may be made subject to suitable regu-

[1] United States Commissioner of Corporations, Special Report on the Beef Industry, 1905, p. xxi.

lation in the interest, not only of the producers and consumers who are dependent upon them, but also in the interest of the corporations themselves.

LOCAL MARKETING AND DISTRIBUTION.

Opportunities available to stockmen and farmers for disposing of their meat animals otherwise than through the large live stock markets and packing centers are limited largely to the demands of retail butchers and local packing houses, and, to a certain extent, the slaughter of animals on the farm to be sold in the form of dressed meat or home prepared meat products. The sale of stock to local dealers for shipment to the centralized markets has been considered in the preceding section. The establishment of municipal abattoirs in some places and the present tendency toward centralization of local slaughter under municipal control, together with the recent introduction of pork curing as a department of local ice plants and the organization of farmers' cooperative packing companies at several points give timely and pertinent interest to this phase of the subject.

The Bureau of the Census reported that in 1909 40 per cent of the cattle, 61 per cent of the calves, 17 per cent of the sheep and lambs, and 36 per cent of the hogs of the country were slaughtered in retail slaughterhouses and on farms.[1]

Tables 1 and 2 show that local methods of marketing are prevalent to a greater or less degree in all the States, and principally in those sections where live stock production is of secondary importance. Table 2 indicates that more than half, or approximately 60 per cent of the meat animals marketed in the New England and cotton groups of States are disposed of locally. The table further indicates that this method of marketing is of least importance in the corn belt group, where less than 10 per cent of the stock is marketed locally. In the northwestern group of range States it appears that about 30 per cent of the cattle and hogs, 60 per cent of the calves, and 20 per cent of the sheep are marketed locally, and that in the southwestern group and California this form of marketing, except in the case of veal calves, is of minor consequence. Considering the United States as a whole, it is significant that relatively more veal calves than any other class of animals are disposed of at local markets, according to these estimates, which correspond to the figures of the Census Bureau given above.

Retail Meat Markets.

Indications seem to point toward a decline in the amount of slaughtering in retail slaughterhouses, although the method of selling animals to local retail butchers still is of considerable importance in many sections of the country, as is shown by Tables 1 and 2. From Table 1 it will be noted that in 18 States 30 per cent or more of the cattle are sold to local butchers for the retail trade, and that the same is true of veal calves in 30 States, hogs in 17 States, and sheep in 16 States. In Table 2 it will be noted that this method of marketing is most prevalent for all classes of animals in the New England and cotton groups of States and the northwestern group of western range States. In the New England States it is shown that from 22 to 65

[1] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910, Manufactures, 1909. Statistics for the Slaughtering and Meat Packing Industry, p. 14.

per cent of the cattle, from 31 to 99 per cent of the veal calves, with the exception of those in Vermont, from 18 to 61 per cent of the hogs, and (with the exception of those in Vermont) from 54 to 98 per cent of the sheep are sold to local butchers for the retail trade. In the cotton States from 13 to 65 per cent of the cattle, from 13 to 88 per cent of the veal calves, from 12 to 63 per cent of the hogs, and from 10 to 71 per cent of the sheep are marketed in this manner. In the northwestern group of western range States, it is indicated that from 25 to 64 per cent of the veal calves, and (with the exception of those in Wyoming) from 10 to 59 per cent of cattle, from 8 to 34 per cent of hogs, and from 5 to 55 per cent of sheep are so marketed.

The Bureau of the Census reports indicate that the greater part of the animals slaughtered for food in the United States in 1909 passed through wholesale packing establishments, 56,778,929, or almost two-thirds of the animals, being slaughtered in such plants. As compared with this, the reports show that a total of 13,012,614 animals, or 30 per cent of the beeves, 44.2 per cent of the calves, 13.2 per cent of the sheep, and 7.5 per cent of the hogs were slaughtered at retail slaughterhouses. No such figures from the report for 1900 are available for comparison. It is notable that a larger number of veal calves than of any other class of animals were slaughtered at retail slaughterhouses; also that the number so slaughtered was 5.8 per cent greater than the number slaughtered at wholesale packing establishments. This is in accordance with the figures of Table 1, which show that throughout the United States selling to local butchers is practiced more generally in the case of veal calves than in the case of other classes of animals.

In the report of the Commissioner of Corporations on the beef industry [1] may be found the results of an investigation concerning the proportion of the fresh beef supply slaughtered by local butchers in 835 towns and cities, varying in size from 2,000 population to 50,000 and over, and located in 48 States. A summary of the data gathered is given in Table 40.

TABLE 40.—*Proportion of fresh beef supply killed by local butchers in 835 towns and cities (1903).*

[Percentage of towns in which the indicated percentage of the total consumption was killed locally.]

Population of town or city.	Under 25 per cent of consumption.	25 to 50 per cent of consumption.	50 to 75 per cent of consumption.	75 to 100 per cent of consumption.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
2,000 and under	6.0	4.0	9.0	81.0
2,000 to 5,000	17.5	4.0	9.5	69.0
5,000 to 10,000	30.0	8.0	11.0	51.0
10,000 to 25,000	45.0	6.0	20.0	29.0
25,000 to 50,000	40.0	16.0	24.0	20.0
50,000 and over	45.0	18.0	10.0	27.0
All towns	18.5	5.5	10.5	65.5

In the report attention is called to the fact that in 259 out of 316, or 81 per cent, of the towns of 2,000 inhabitants or under, 75 per cent or more of the total consumption of beef is killed locally, while

[1] United States Commissioner of Corporations, Special Report on the beef industry, 1905, pp. 70–75.

in cities with a population of 50,000 or more only 27 per cent are reported to be supplied with three-fourths of their beef from local butchers. The table shows further that as the population increases the proportion of beef shipped into the city also generally increases.

Table 41 shows the proportion of fresh beef killed by local butchers in different sections of the United States in 1903.

TABLE 41.—*Proportion of the fresh beef supply killed by local butchers in different sections of the United States (1903).*

[Percentage of towns in which the indicated percentage of the total consumption was killed locally.]

Section.	Under 25 per cent of consumption.	25 to 50 per cent of consumption.	50 to 75 per cent of consumption.	75 to 100 per cent of consumption.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
New England	85.5	2.5	4.0	8.0
New York, New Jersey, and Pennsylvania	39.5	13.5	17.5	29.5
Southern States [1]	4.0	1.0	12.0	83.0
Central States [2]	9.0	7.0	11.0	73.0
Western States [3]	6.0	4.5	10.5	79.0
Mountain and Pacific States [4]	4.0	3.0	4.0	89.0

[1] Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Kentucky, Arkansas, Louisiana, Texas, Oklahoma, and Missouri.
[2] Ohio, Indiana, Illinois, Wisconsin, and Michigan.
[3] Minnesota, Iowa, North Dakota, South Dakota, Nebraska, and Kansas.
[4] Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Idaho, Washington, Oregon, and California.

From the table it will be noted that the New England towns are dependent mainly upon the large packers for their supply of fresh beef. This also is true to a marked degree in the New York, New Jersey, and Pennsylvania towns. The reverse is the case in the Southern, Central, Western, Mountain, and Pacific States, where the production of cattle is greater, and it is shown that in 73 to 89 per cent of the towns or cities more than 75 per cent of the total consumption of beef is killed by local butchers.

Generally, the lower grades of cattle are handled by local butchers. This fact is shown by the special live stock marketing schedule, previously quoted. Out of a total of 1,188 replies to the question relative to the grade of stock purchased by local butchers, 70 per cent indicated the grade of cattle to be "medium to poor butcher stock," and the remainder largely "good butcher stock" and "medium to poor steers." The replies indicate that the hogs and sheep marketed in this manner in general are of better grade than the cattle.

The ordinary small local slaughterhouse which so long has been a necessary adjunct to the so-called butcher shop gradually is passing out of existence. Undoubtedly one of the large contributing factors in this change is the decrease of the local supply of live stock. Another important cause is the growing demand on the part of the public for better meat, produced from healthy animals under sanitary conditions. This demand is found particularly in the cities and larger towns and it has furnished much of the impetus for the extension of the municipal abattoir movement.

A significant feature of the retail business during recent decades has been the replacement, in a large proportion of cases, of the old-fashioned butcher shop by the modern retail market, which depends entirely upon wholesale meat concerns for its supply. Not only in

large cities, but in many towns and villages where meat animals are more or less available, slaughtering has been abandoned by retailers, either because a sufficiently regular supply throughout the year is not obtainable, or because the meat can be procured more cheaply, regularly, or conveniently by means other than slaughtering. Further, there appears to be a growing tendency toward the combination of meat markets with grocery stores, more especially in the larger cities but also to a considerable extent in smaller places.

In 1908 the Department of Agriculture conducted a special investigation [1] in 50 cities, large, medium, and small, in all parts of the country, to determine the gross margin to the retailer in handling a side or carcass of beef. It was established that in the North Atlantic States the consumer's price of beef was 31.4 per cent higher than the wholesale price; 38 per cent higher in the South Atlantic States; and 39.4 per cent higher in the Western States. The average for the United States was 38 per cent. The investigation revealed further that the percentage of increase usually was lower in the larger than in the smaller cities, and was higher in the case of the cheaper grades of beef.

The investigations of this office in 1914 relative to the methods and cost of marketing typical lots of cattle from producer to consumer show a wide variation in the gross margins to the retailers who handled the beef of these shipments. These margins were found to range from 8.47 per cent to 33.29 per cent in the case of the shipments through the central markets and large slaughtering establishments and from 16.08 per cent to 38.08 per cent in the case of the cattle slaughtered by the local retail butchers. (See pages 71 and 72.)

Very little information is available relative to the cost of retailing meats. The data which are obtainable are largely estimates given by the retailers themselves. It is evident that this cost will vary considerably, depending upon the extent of the service given, the type, size, and location of the business, the class of trade, and the efficiency of the management. At the marketing conference [2] it was stated that the operating expense of the ordinary, up-to-date meat market is 14 to 16 per cent of its sales. An ex-president of the Master Butchers' Association of America stated that at that time retailers were making a gross profit of from 18 to 22 per cent. A number of estimates on cost of retailing meats were obtained from the retailers in connection with the investigations of this office on the marketing of selected lots of cattle in 1914. These estimates ranged from as low as 14 per cent, in the case of a market conducted on a cash basis with no delivery, to as high as 30 per cent, but the more representative markets averaged from 18 to 22 per cent. A significant fact brought out by this investigation was the limited knowledge on the part of a majority of the retailers regarding the cost of running their business.

The cost of retailing meats has been increased materially by the increase in service, particularly delivery service, demanded by the consuming public. The accounts of dealers in various parts of the United States indicate that delivery expenses constitute one-fifth to one-third of the cost of operation in typical retail markets. Co-

[1] Department of Agriculture Yearbook, 1909. (pp. 15–17.)
[2] United States Congress (64th), House Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats, and Related Matters. (1916.)

operation in delivery service has proven successful in many cities and towns, and may be adopted more widely as an economy to the consumer and dealer. A retail merchants' delivery company, composed of all classes of retail dealers, has been in successful operation at Ann Arbor, Mich., a city of 16,000 inhabitants, since 1907. With this system it costs the butchers who are stockholders in the company $2\frac{3}{4}$ cents for delivery of each order not exceeding 100 pounds in weight, and four deliveries are made each day. The company is reported to be a success financially, and has lowered each dealer's delivery costs.

Municipal Abattoirs.

Centralized public abattoirs, either municipally owned or privately owned and operated under city inspection, are displacing rapidly the old type of slaughterhouse. For years public slaughtering establishments have been in existence in many municipalities in Germany, and to some extent in other countries. In the United States, however, they have been introduced only recently, the first municipally owned plant having been built at Paris, Tex., in 1909.

Inquiries recently have been sent out by this office to health officials in all the States requesting information relative to cities within the State having municipal abattoirs. From a summary of these replies as received from 45 of the States, together with information from other sources, it was found that 22 cities in 13 States have abattoirs or slaughterhouses under their control. In 7 instances the establishments are owned and operated by the city, while in the remaining 15 the plants are owned privately and operated under city inspection. The replies further indicate that the movement is being agitated in approximately one-half the States and that a number of cities within the boundaries of these States now are considering the adoption of some form of centralized slaughtering. The distribution of the cities which own abattoirs and which have public abattoirs under city inspection is shown on the accompanying map (Pl. VII, fig. 2).

Whether or not the city should build its own abattoir depends upon local conditions, which should be examined thoroughly before any definite action is taken. The features essential to the financial success of abattoirs of this kind are a competent manager and a sufficient supply of live stock accessible to the local butchers throughout the year. An adequate ordinance also is necessary to regulate the inspection and slaughtering of animals and the handling of meat and to govern the operation of the abattoir. At least one municipality has been compelled to discontinue the operation of its abattoir because of the lack of an ordinance giving it authority to regulate the slaughtering of animals.

Ordinances adopted by the various cities do not differ materially except in minor details. Those on file in the Office of Markets and Rural Organization show them to be based on the regulations of the Bureau of Animal Industry of this department in so far as inspection is concerned. It is customary to specify in these ordinances the fees for inspection and the killing and cold storage charges per head for each of the various classes of live stock.

Officials of municipalities which operate abattoirs state that it is their aim to make them self-supporting only; however, it is a signifi-

cant fact that these plants often are operated at a loss, largely because of poor management, the small number of animals killed, and the unprofitable utilization of by-products.

As a rule, where a city owns and operates an abattoir the inspection fee is included in the charge for slaughtering. Where the plant is operated by private interests the usual fee for inspection is $0.10 per head for cattle and $0.05 for calves, sheep, and hogs. These fees go to the city to defray expenses of inspection. Cities which permit the sale of farm-killed meats within their boundaries—and most of them do—require that the carcass with vital organs attached be brought before the city inspector for observation, for which a fee of $0.10 usually is charged.

The charges for slaughter vary somewhat in the different cities, and are determined largely by the services rendered and the distribution of the offal. In one city which has no cold storage in connection with the abattoir and in which the owner of the animal furnishes the labor for slaughtering and retains all offal, the charge is $0.25 per head. Another city charges $2 per head for cattle and proportionately for other stock, including slaughtering, six days' cold storage, and delivery in any part of the city. In this case the owner retains the hide and edible offal, the remainder going to the abattoir.

The following, which are the charges made at the abattoir of Paris, Tex., are representative of the usual rates: $1.25 for each beef and $0.75 for each calf, hog, sheep, or goat. This includes slaughter, two inspections, five days' cold storage, and delivery to any part of the city. A charge of $0.10 per day is made on each carcass which is left in the refrigerating rooms longer than five days. In lot 12 are given data showing the actual costs of handling a southern steer at the abattoir at Paris, Tex.

In several cities the abattoir charges have been a source of dissatisfaction on the part of the butchers, and in one case the butchers obtained an injunction against the city, claiming exorbitant charges for services rendered and too stringent regulations regarding slaughterhouse equipment.

The principal advantages to be derived from concentrated slaughtering at public abattoirs are the utilization of offal, practically all of which is wasted at the local slaughterhouse, the better appearance of the dressed carcass, because of improved facilities and more careful handling, which materially adds to its value, and the lessening of the percentage of cut hides. It also enables a municipality to carry out effectively a thorough system of inspection.

The following information obtained by the Bureau of Animal Industry regarding conditions in a certain eastern city of 50,000 population, which probably is typical of many other cities throughout the country, offers an excellent illustration of the possibilities of improvement in local marketing through centralized slaughtering. Within a radius of about 8 miles of this city 25 killing places were found, at which the total weekly slaughter amounted to 40 to 100 cattle, 50 to 300 hogs, and 100 to 500 sheep. This average was representative of about 40 weeks in the year, while some killing was done during the summer months.

In these slaughterhouses it was noted that the offal was wasted, with the exception of the small amount consumed by hogs. The dressing was done poorly, detracting from the value of the carcass and

producing a large percentage of cut hides, thus further reducing the revenue. Attention was called to the fact that all of this killing could be done at one plant with the labor of 6 to 8 men, instead of 25 to 50 as was required here. Furthermore a modern sanitary plant could be operated at a profit from the revenue derived from the offal and abattoir fees. With such a plant Federal inspection could be maintained, thus increasing the value of the meat by making possible interstate shipments.

The establishment and successful operation of a municipal abattoir is not without its limiting factors. Principal among these are antagonism on the part of local butchers and the difficulty of obtaining competent management. It also is a fact that local politics in many cases is a detriment to such an undertaking, hindering both the appointment of competent employees and public support of the enterprise.

Local Packers.

Local packing plants are so named because they are situated in live stock producing sections away from the market centers and are dependent mainly upon the surrounding territory for their supply of animals. Although the amount of business done by local plants is small as compared with the total packing business of the country, nevertheless they are a factor of considerable importance in the local marketing of live stock in sections where they have been established.

The distribution of local packing houses is mainly in the more important live stock producing States and in sections remote from live stock markets and packing-house centers. Tables 1 and 2 indicate that the disposing of stock to local packers is most prevalent in the North Central and far Western States and to a lesser extent in a few of the Southern States. A number of small packing companies also have been established in Eastern States. These, however, are dependent upon market centers for the major part of their supply of stock, in which respect they differ from most of the local plants in other sections of the country.

The business of these local plants is confined largely to pork packing, their trade in beef and other fresh meats being limited in most cases to the demands of the local territory. The fact is substantiated by Tables 1 and 2. On account of the equipment, refrigerator cars and extensive selling organization necessary to conduct successfully a large-scale beef-packing business, small plants generally have been unable to compete with the large packers in the beef department of the industry beyond the local territory.

Aside from competent, thoroughly trained management, the successful and economical operation of a local packing business is dependent mainly upon three factors, the importance of which often is underestimated. In the first place, a uniform and adequate supply of hogs accessible to the plant and a reasonably even distribution of receipts during the year are essential. A number of instances have been noted in which packing plants have been abandoned because of an insufficient supply of hogs, and it is not uncommon to find smaller packing houses running at a loss during the summer season in order to maintain the organization and equipment necessary for the winter kill. The greatest difficulty in this respect has been noted in the South. One plant which handled approximately 30,000 hogs in 1915

killed 93 per cent of them during the six months from October to March, inclusive. This same company purchased between 300,000 and 400,000 pounds of "packers' " sides during the summer months in order to hold its trade.

The amount of capital required to establish and operate a business of this kind is considerable, especially in the case of a new concern establishing a trade for its products. Usually, in the case of packing companies located at interior points, the capital necessary to operate the plant and finance stocks of meat in storage is from 150 per cent to 200 per cent of the amount invested in plant and equipment. Furthermore, it is necessary often to obtain credit for large additional sums in order to carry on the business successfully. The lack of such credit has been one of the leading factors in the failure of a number of plants. Figures obtained from a concern which handles approximately 35,000 hogs and a small number of cattle a year may be considered fairly representative of plants of this type and of similar capacity. This company has $110,000 invested in plant and equipment, has operating capital to the amount of $150,000, and to conduct its business during 1915 found it necessary to borrow $200,000.

The disposition of the finished products of these plants is of great importance, as it is not possible always to market them quickly, easily, and at satisfactory prices. The products of small plants often can be disposed of to the large packers more advantageously than elsewhere. Information obtained from a number of local packers indicates that from 30 per cent to 60 per cent of their output ordinarily is sold to the large packers or through brokers. In this respect the local packer is at a disadvantage, inasmuch as the large packer must buy the products at a figure which will permit him to sell at a profit. On the other hand, the local packer has an advantage in buying his live stock, and in some cases this advantage may be of sufficient magnitude to offset his disadvantage in marketing his products.

The minimum capacity at which a plant of this type can be operated economically is considered generally by those familiar with the local packing business to be 300 to 500 hogs per week. Plants with smaller capacities ordinarily have to sacrifice their surplus products on the market because they are not able to ship full cars of a single product. Further, it is impossible for such plants to purchase supplies as advantageously or to utilize the by-products as economically as the larger plants.

COOPERATIVE PACKING HOUSES.

The widely demonstrated practicability of cooperation as a means of marketing grain, dairy, and fruit products in this country has led recently to the undertaking of similar enterprises in the field of slaughtering and distribution of meats, more especially hog products. It is recognized that the packing business is a complex and specialized industry, requiring large capital to provide a proper plant and finance stock in storage; also that highly trained management is essential. Nevertheless, it is contended by many authorities on cooperation that the successful conduct of meat packing on a large scale is practicable, and several such enterprises now are under way.

The application of cooperative methods to the packing house business first was inaugurated at La Crosse, Wis. This association, known as the Farmers' Cooperative Packing Co., was organized

in June, 1914, under the cooperative laws of Wisconsin. The plan immediately became popular, with the result that similar companies, capitalized at $100,000 to $1,000,000 each, were projected in at least 16 other communities in six States, and including the one at La Crosse represented a total capitalization of $4,500,000. A number of the proposed companies since have been abandoned. The company at Wausau, Wis., began operations in January, 1916. Organization has been completed and building operations begun in two other instances, and companies are in process of organization at seven other points. The stated capitalization of the cooperative companies now being operated and in process of organization amounts to $3,500,000.

The laws of Wisconsin relating to cooperative associations and to unjust discrimination in prices are considered especially favorable for cooperative meat packing enterprises. This is evidenced by the fact that the two companies now operating, and four of those in process of organization, are located in that State.

Although organized as farmers' cooperative packing companies, with capital stock owned largely by farmers, practically none of the companies have originated with the farmers themselves and they have been promoted chiefly by persons from outside of the communities concerned. This has involved a promotional cost of from 15 to 25 per cent of the capital stock; that is, in the case of a company capitalized at $500,000, from $75,000 to $125,000 is expended for the sale of stock. An instance recently was noted of a noncooperative local packing company, capitalized at $300,000, which was organized at a cost of $400, or a little more than one-tenth of 1 per cent of the capital.

In the case of one of the cooperative companies the amount received from the sale of stock and the premiums was reported to be $266,515. The stock is owned by approximately 2,100 individuals, most of whom are farmers residing within a radius of 100 miles of the plant. The reported cost of organizing this company was $37,814.53 and the total cost of plant and equipment, including additions and improvements, was $134,228.56, which left $94,471.91 with which to operate the plant and conduct the business of the company. In the following year this amount was reduced to $83,732.87 by additional improvements. The losses incurred by the company during the first 18 months of operation reduced the operating capital to a little more than $12,000. Because the company was handicapped badly from the outset it may not be considered a fair example of what may be accomplished by cooperative plants organized and operated under more favorable conditions. On the other hand, communities which are considering the establishment of such plants, by carefully considering the experiences of this company, should be enabled to avoid a number of disastrous mistakes.

The business of cooperative packing companies, as regards the supply of stock, the operation of the plant, and the distribution of the finished products, is not unlike that of noncooperative companies similarly situated, and what has been said in the preceding section relative to the limiting factors of local packing plants is applicable to those which are cooperatively owned. Authorities on cooperative organization agree that the more simple the processes involved the more certain is the success of a cooperative scheme. Considering the complexity of a large-scale packing business and the fact that

the successful application of cooperative methods to such an industry is not yet demonstrated in this country, it would seem advisable for communities which are contemplating an enterprise of this kind to proceed conservatively, either deferring the establishment of an extensive plant until its feasibility has been proven, or limiting the business to local trade at the start and gradually expanding as the success of the organization and demand for the surplus may warrant.

Marketing Farm-Slaughtered Meats.

The marketing of farm-prepared meats and meat products, although of comparatively limited possibilities in relation to the industry as a whole, still is of importance under certain conditions, and is practiced to a varying extent in practically all parts of the country.

The total number of animals slaughtered on farms and ranges in the United States in 1909 was 18,567,272.[1] Of this total 7.6 per cent were beeves, 6.1 per cent calves, 2.8 per cent sheep and lambs, 0.6 per cent goats, and 82.8 per cent hogs. It was further shown that the number of hogs slaughtered on farms in 1909 was 28.9 per cent of the total number of hogs slaughtered for food in the United States. From a study of Table 1 it will be seen that while this method of marketing is practiced in all States its importance varies noticeably in the different States and for the different classes of animals. Taking the United States as a whole, hogs are sold in the form of farm-dressed carcasses more than any other class of animals, with calves, sheep, and cattle following in the order named.

Selling Dressed Carcasses.

The sectional importance of farm slaughtering is indicated by Table 2, in which the States have been grouped according to specified producing areas. It will be noted from this table that the sale of farm-slaughtered carcasses is of greatest importance in the New England and cotton States and the northwestern group of western range States. The small importance of this method of marketing is noticeable particularly in the corn belt States, where it is shown that from 1 to 2 per cent only of the cattle, from 1 to 5 per cent of the veal calves, from 1 to 5 per cent of the hogs, and from 0.1 to 1 per cent of the sheep are so marketed. The table further indicates that cattle are sold as farm-dressed carcasses most extensively in the New England States, where from 4 to 13 per cent are so marketed; calves in the northwestern group of western range States, where, with the exception of two States, from 18 to 47 per cent are so marketed; hogs in the New England States, with from 17 to 33 per cent; and sheep in the cotton States, where with one exception from 5 to 24 per cent are so marketed.

Farm-dressed carcasses usually are sold to local retail butcher shops, although it is not uncommon for farmers in some sections, particularly in the South, to sell such meats to a private trade at lower prices than those prevailing at the retail stores. Many complaints are made by retail butchers in towns where such selling is practiced, because of the injury to their business. One of the dangers of this method of marketing is the possibility of a glutted market with a

[1] United States Census, Bureau of, Bulletin of the Thirteenth Census, 1910, Manufactures, 1909. Statistics for the Slaughtering and Meat Packing Industry, p. 14.

resultant low price, especially when farmers slaughter their animals before making arrangements for the sale of the carcasses. Several instances in southern towns recently have been recorded in which beef and pork carcasses have sold as low as 3 cents to 4 cents per pound because of failure to arrange a sale beforehand.

A common practice among farmers living near large cities is to slaughter the animals on the farm and consign the carcasses by express to commission dealers. This method is used particularly for veal calves and to a less extent for lambs and hogs.

"String butchers" are those who go through the country buying live stock, principally calves, hogs, and sheep, and slaughtering them at the farms where purchased. In some localities this custom is very extensive. At one place in Michigan, for example, about 20 of these butchers were operating within a radius of 25 miles. Their meats were disposed of principally to retail markets and shipped to commission houses in the cities. The increasing restrictions regarding inspection of meats sold in cities and towns gradually will eliminate this class of dealers.

FARM-CURED MEATS.

On account of the nature of the product, the opportunities for marketing farm-cured meats are not as limited as is the case with fresh carcasses. Investigations indicate that the general practice over the country is for the farmer to sell such products to local retail stores or to wholesale dealers. In some instances farmers have developed a direct-to-consumer business and have established such wide reputations for their hams, bacon, and sausage that not only their entire vicinity has been drawn upon for the requisite raw materials but large amounts of "green" meats are purchased at packing centers, and the business has assumed the proportions of a wholesale packing establishment. The chief elements of success in ventures of this kind are the catering to a select trade at special prices, the maintenance of a high standard of quality, and the judicious use of advertising.

There is a large opportunity for cooperative effort in communities which are adapted to the production of farm-cured meats, particularly with reference to advertising and standardization. In Brooks County, Georgia, where the farm curing of meats is practiced extensively, the farmers and business mens' clubs, through a joint committee, have adopted standard rules for the cutting, trimming, smoking, and labeling of hams, bacon, and shoulders, and inaugurated a plan for advertising and marketing the three grades they have established. A community curing plant large enough to accommodate the hogs of several farmers would assist greatly in producing such results. The principal advantages of such a plant lie in the production of hams, bacon, and shoulders of uniform quality, shape, and cure and the greater efficiency to be obtained in slaughtering and handling the meats at a central plant.

LOCAL ICE PLANTS.

The curing of meat at ice plants is a recent development in local marketing in the South. The business is confined to the handling of pork products, and either the meat is cured for the farmer at a specified price per pound or the dressed hogs are purchased from the farmers by the ice plant management. The hogs are slaughtered on the farm

in either case, and the cured meats, aside from those retained for home use, are sold principally to local trade.

One representative plant which cures meat for the farmers charges 1 cent per pound for curing, 2 cents for curing and smoking, and 3 cents for curing, smoking, and wrapping. The meat, cut in desired pieces, is delivered to the ice plant by the farmer, and the ice plant furnishes the labor and material, together with the refrigeration, necessary in the preparation of the meats. The amount of meat cured at this plant since the business was inaugurated is reported by the management to be as follows: Winter of 1913–14, about 30 tons; 1914–15, about 55 tons; and 1915–16, about 120 tons. A number of plants in southern Georgia are conducting the business after this plan.

Where ice-plant owners purchase the hogs from the farmers, the hogs are bought dressed weight, usually with the heads removed. One plant which began this business during the winter of 1913–14 by purchasing 100 hogs, bought 200 during the following winter and approximately 350 during the winter of 1915–16. It is stated that the number of hogs produced in the community has almost doubled in the last two years, largely because of the market provided by the ice plant. According to the statement of the manager of this plant, a profit (not including refrigeration) of 42.3 per cent on the investment was made on the first winter's business and 32.4 per cent on the second winter's business. Similar results have been obtained by other plants. The business is being conducted in one way or another at from 25 to 30 plants in various parts of the South. The State of Arkansas leads in the number of these plants, most of which purchase the hogs from the farmers. The industry in that State has been extended and assisted by a joint representative of the States Relations Service and of the Office of Markets and Rural Organization, cooperating with the extension division of the University of Arkansas, with the result that about 20 ice companies already have taken up the work, and a number of others have stated that they will engage in the business during the next winter.[1]

While it is not likely that a very large number of hogs ever will be handled by local ice plants, this outlet provides a market for the surplus hogs of the community, and offers encouragement to small farmers and others who are not so situated as to ship in carload lots to the large markets or packing-house centers. It also enable farmers to save a large proportion of their meat in curing, while under the ordinary conditions a relatively large percentage of the meat usually is lost. It also enables ice-plant owners to obtain additional revenue from their plants by utilizing the equipment and storage rooms during the winter months, when the ice business is dull.

PARCEL-POST MARKETING.

Very few data are available to show the extent to which meats are marketed by parcel post. Such figures as are obtainable from the Post Office Department, however, indicate a marked increase during the last two years (1914–16), in the amount of food products, including meats, marketed by mail directly to the consumer. Particularly is this true in the large centers of population.

[1] Foot, Lawrence, How to Make as Good Hams in Arkansas as are Made in Virginia. Directions to ice factories, cold-storage plants and creameries with refrigeration. Little Rock, Ark., 1915.

In 1914 the Post Office Department, through the postmasters in in some of the large cities, inaugurated a "from-farm-to-table" service in food distribution. This service since has been established in 35 of the leading cities of the country, and the reports of the postmasters indicate that more or less meats and poultry are distributed by mail at these places. The parcel post division of one of the large cities of the Middle West handled during 1915 5,316 packages of poultry, 4,893 packages of fresh meats, 4,116 packages of cured meats, and 262 packages of lard. The report from another large city shows that thousands of families received Christmas turkeys by parcel post, and that fresh and cured meats, lard, and hams are passing through the post office in varying quantities. The postmaster of one of the larger Southern cities reports that of this class of mail 20 per cent is poultry, 5 per cent is cured meat, and 5 per cent country sausage.

Parcel post, as a marketing medium for meats and meat products, from its nature, is limited in comparison with other methods of marketing; yet the amount thus marketed, though small as a percentage, is considerable as a sum total. For fresh meats this method of delivery is best adapted to the cooler seasons, while for cured products it is available throughout the year.

RELATIVE MARGINS IN MARKETING AND DISTRIBUTION.

The data here presented consist of (1) market prices of live stock and meats for a series of years, arranged by monthly averages, together with a brief discussion of the tendencies and variations which they reveal; and (2) results of a series of detailed studies on the yield and disposition of selected lots of cattle.

LIVE-STOCK AND MEAT PRICES BASED ON MARKET QUOTATIONS.

In order to determine approximately the normal relations between live-stock and meat prices, average monthly quotations on the different kinds of animals and of meats for the five-year period 1910 to 1914 were compiled and are shown graphically herewith. Market prices at Chicago were chosen for this purpose, because that city is the seat of the largest live-stock market and meat-packing center in the world; quotations at other markets and throughout the country are based to a large extent upon prices prevailing at Chicago. At the same time, by reason of its large and varied population, Chicago is one of the most important consuming points; hence retail meat prices are more readily comparable with wholesale quotations and live-stock-market statistics than would be the case concerning similar data representing any other market.

Monthly average prices have been used in this study, with the exception of two instances which represent weekly averages for good beef steers and for lambs. Prices are given for each year from 1910 to 1914, inclusive, and five and ten year averages are shown for the periods 1910–1914 and 1905–1914, respectively. Monthly average receipts at the six leading markets for 1910–1914 are given for various classes of live stock.

A comparison of the prices of months and weeks of each year with the average price for all the years represented on the charts indicates in a general way both the extent to which market prices are due to certain established seasonal influences and the variations from normal

price conditions which occurred. The prices used in constructing the charts for cattle, hogs, and sheep are for specified classes and grades. The quality and condition of the animals within these classes vary materially from one season of the year to another, hence the variations shown should be considered indicative not altogether of market price fluctuations, but also, in large part, of seasonal differences in the market grade of the receipts. Daily fluctuations, which frequently are large and abrupt, and which constitute one of the most adverse features of live-stock-market conditions, are so irregular that it has not been deemed practicable to attempt an analysis of that subject in this connection.[1]

Market Prices of Live Stock.

BEEF STEERS.

The prices for native beef steers are shown in Plate VII and Plate VIII, figure 1. In Plate VII[2] are represented the weekly average prices for good beef steers for each of the years 1910 to 1914, similar averages for the five years combined, and for the ten years 1905–1914. With the exception of 1910, during which unusually high prices prevailed in early spring, the prices of good beef cattle tended to reach their lower limit about the last of January or the first of February, while the high point usually has been reached in late August or early September.

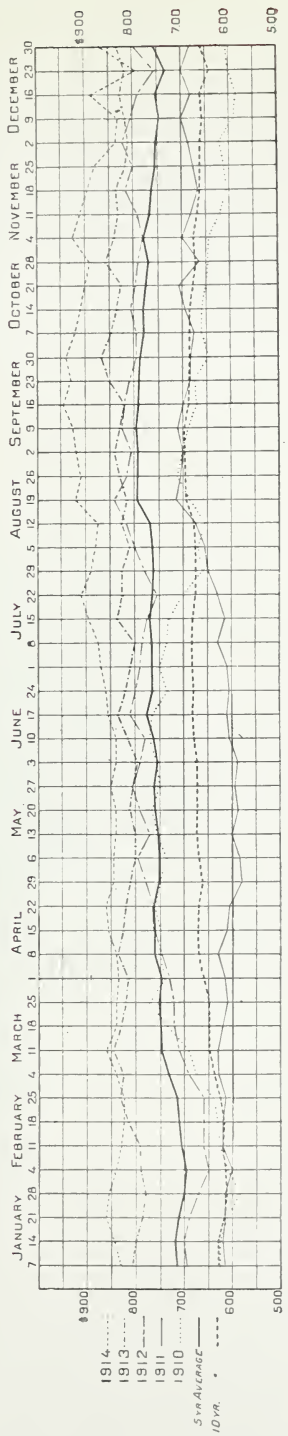
A comparison of the monthly variations in the five-year average receipts of cattle at the six leading markets and the corresponding fluctuation in Chicago prices of native beef steers weighing from 900 pounds upward, are shown in Plate VIII, figure 1. In addition this figure shows average prices by months of native beef cattle at Chicago for the ten years 1905 to 1914, inclusive. The similarity in seasonal variations shown for the different periods covered by the plate is significant of the regularity of live-stock movements and relative prices from year to year.

Plate VIII, figure 2, shows the average prices of feeder cattle at Chicago by months during the five years 1910–1914, inclusive. Five and ten year averages also are shown. The averages for both the five and ten year periods show that stocker and feeder cattle prices are highest in April and May and lowest in October, November, December, and January. In this connection it should be noted that the prices for the individual years vary from the average in that the lowest prices of stocker and feeder cattle are more frequent in January and July than in the months indicated by the five and ten year monthly averages.

Notwithstanding the fact that the five-year average of prices shows that the month of January is the lowest in price, the movement of stocker and feeder cattle from Chicago as a monthly average for five years has been greater in October, November, September, December, and August than in January. The five-year average shows the smallest number of stockers and feeders to be sent out from Chicago in May; the difference in number between the high and low months of January and May being about 34,000 head.

[1] For statements relative to daily fluctuations, see United States Congress (64th), House Document No. 855. Proceedings of the Conference Relative to the Marketing of Live Stock, Distribution of Meats, and Related Matters (1916).

[2] The data represented by Plates VII to XIII were compiled from the Chicago Daily Farmers and Drovers Journal, Yearbooks of Figures, 1910 to 1914, inclusive.



GOOD BEEF STEERS; AVERAGE PRICES BY WEEKS.

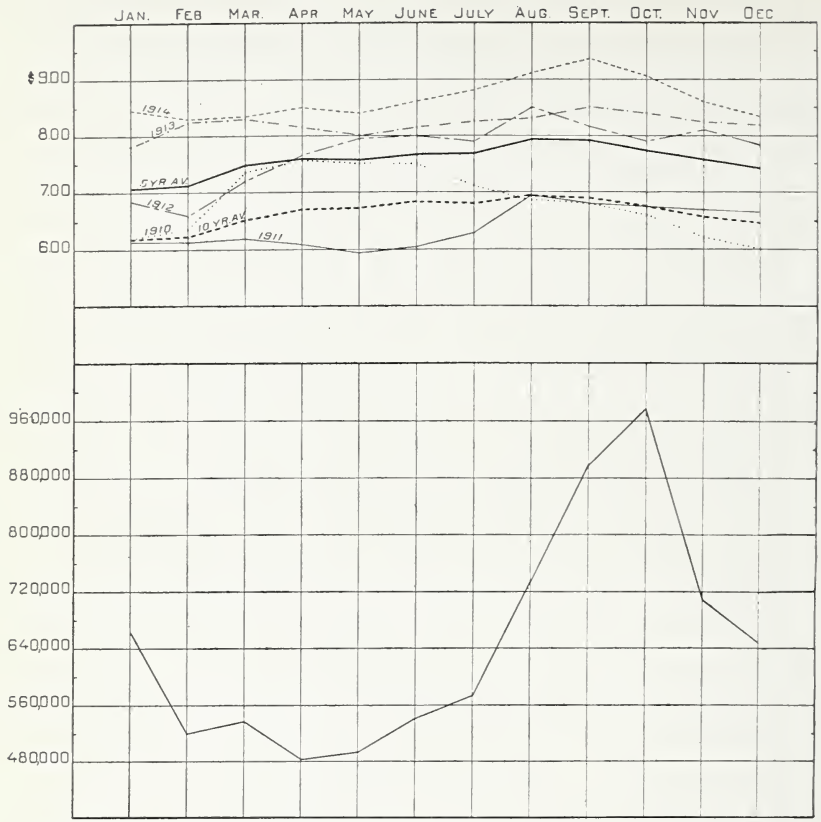


FIG. 1.—NATIVE BEEF STEERS 900-1,900 POUNDS: AVERAGE PRICES BY MONTHS. NATIVE BEEF STEERS, ALL CLASSES; AVERAGE RECEIPTS AT SIX LEADING MARKETS FOR FIVE YEARS, 1910-1914.

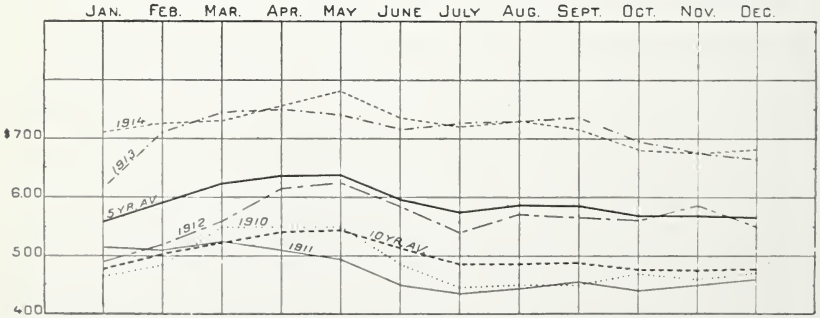


FIG. 2.—STOCKERS AND FEEDERS; AVERAGE PRICES BY MONTHS.

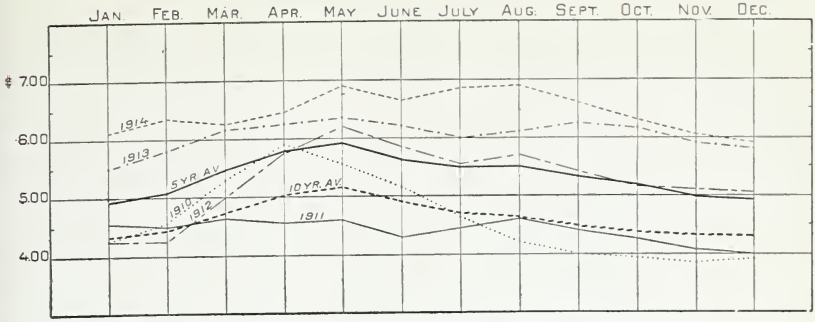


FIG. 1.—FAT COWS AND HEIFERS; AVERAGE PRICES BY MONTHS.

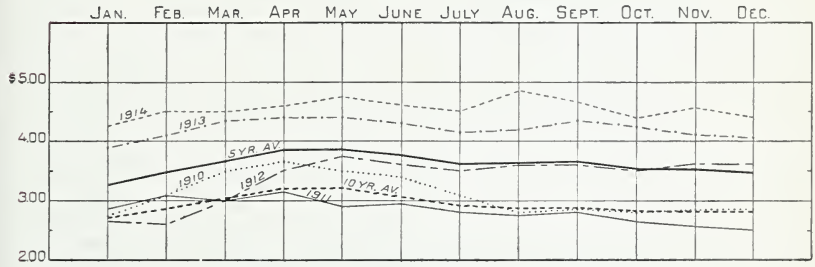


FIG. 2.—CUTTERS AND CANNERS AVERAGE PRICES BY MONTHS.

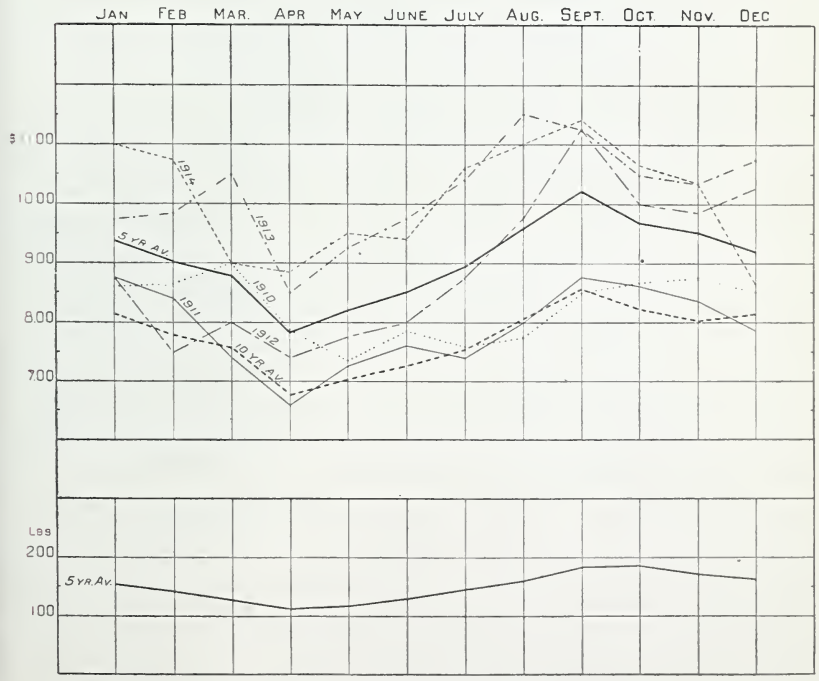
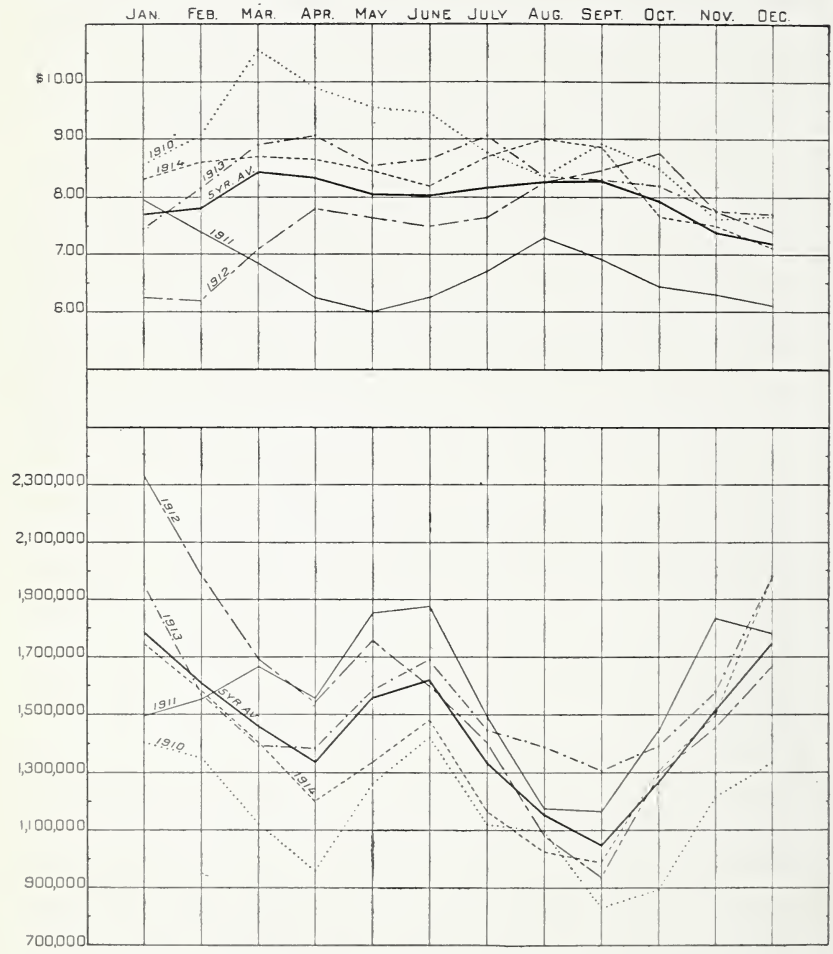
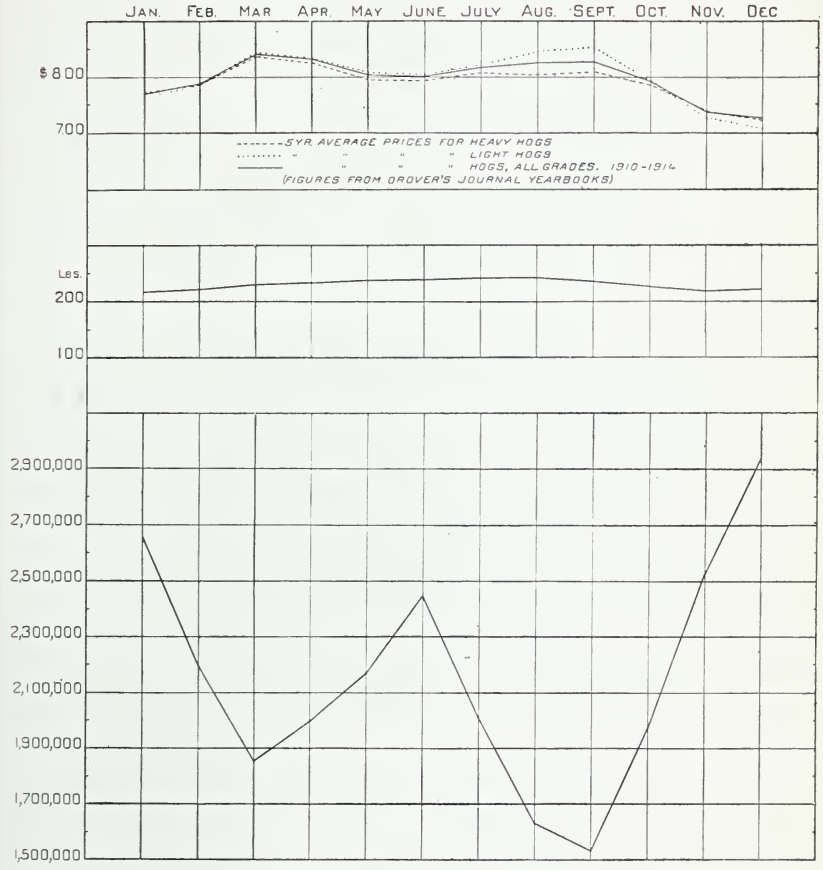


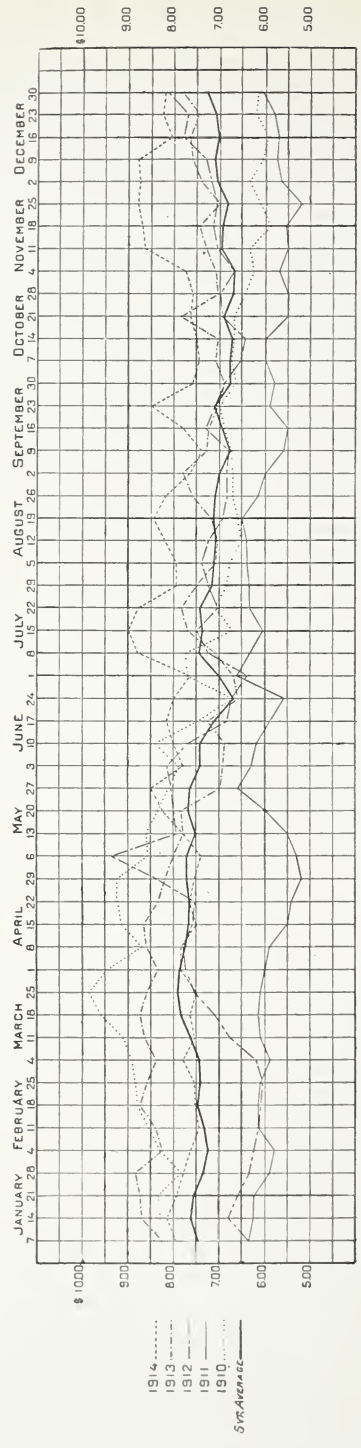
FIG. 3.—VEAL CALVES; AVERAGE PRICES BY MONTHS.
VEAL CALVES; AVERAGE WEIGHT FOR FIVE YEARS, 1910-1914, AT CHICAGO.



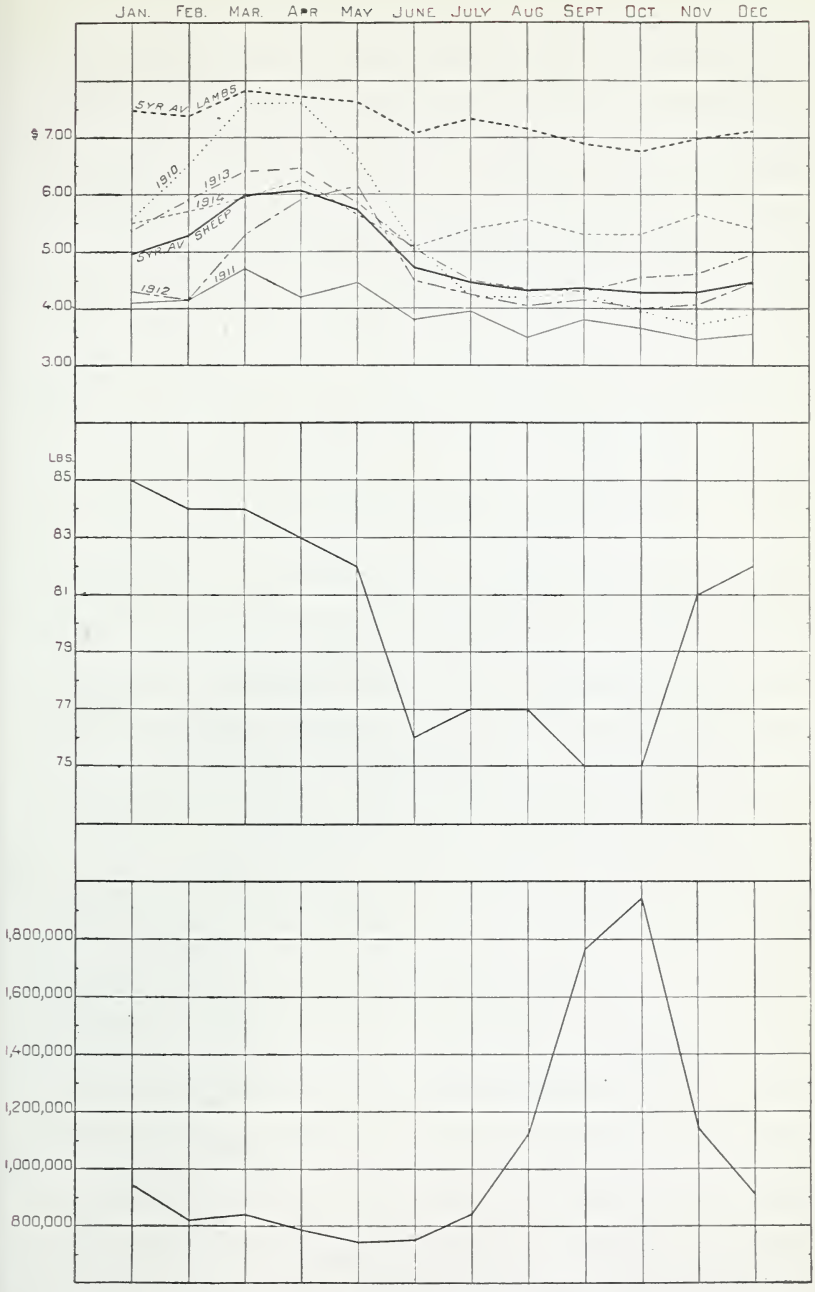
HOGS, ALL GRADES; AVERAGE PRICES BY MONTHS.
HOGS; AVERAGE RECEIPTS BY MONTHS AT SIX LEADING MARKETS.



HOGS; HEAVY, LIGHT, AND ALL GRADES; AVERAGE PRICES BY MONTHS; 1910-1914.
HOGS; AVERAGE WEIGHTS BY MONTHS FOR FIVE YEARS, 1910-1914, AT CHICAGO.
HOGS; AVERAGE NUMBER PACKED IN WEST FOR FIVE YEARS, 1910-1914.



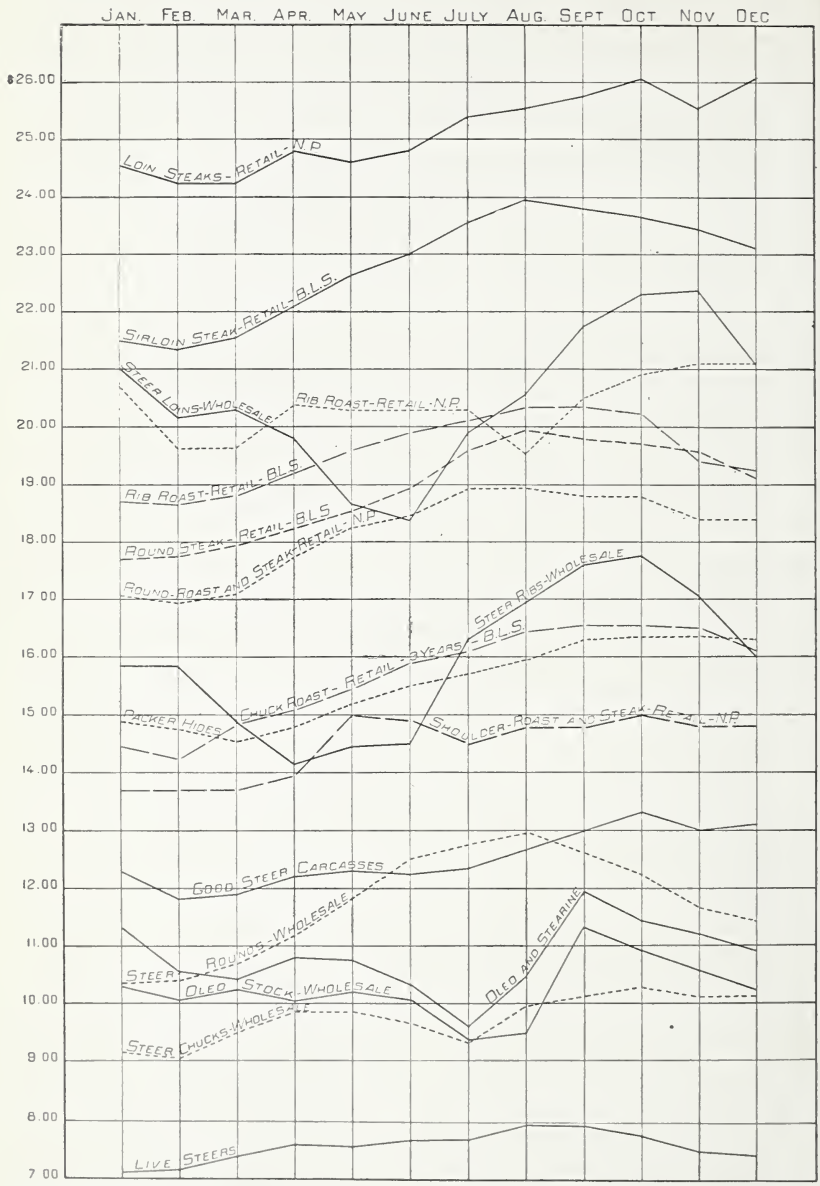
LAMBS; AVERAGE PRICES BY WEEKS.



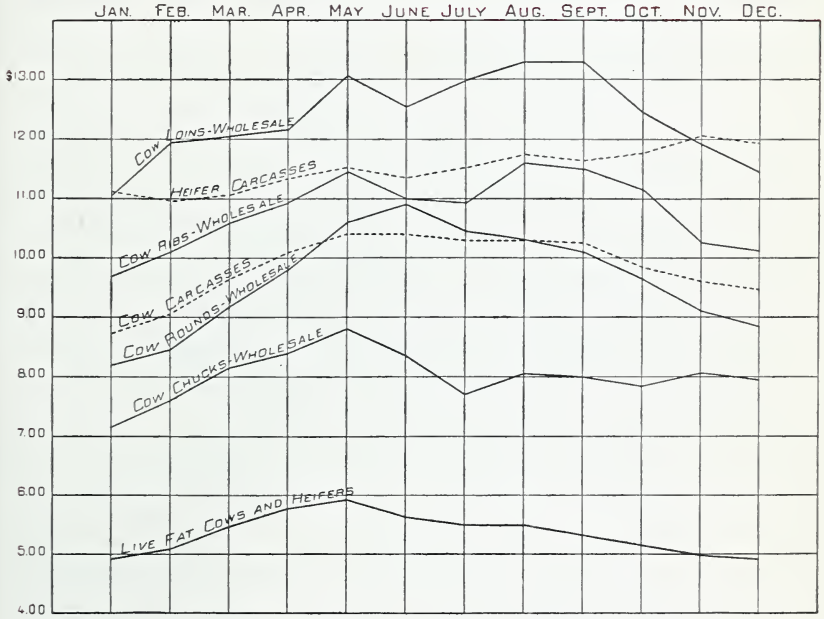
LAMBS; NATIVE AND WESTERN COMBINED; AVERAGE PRICES BY MONTHS; SHEEP AND LAMBS; AVERAGE PRICES BY MONTHS FOR FIVE YEARS.

SHEEP AND LAMBS; AVERAGE WEIGHTS BY MONTHS FOR FIVE YEARS, 1910-1914, AT CHICAGO.

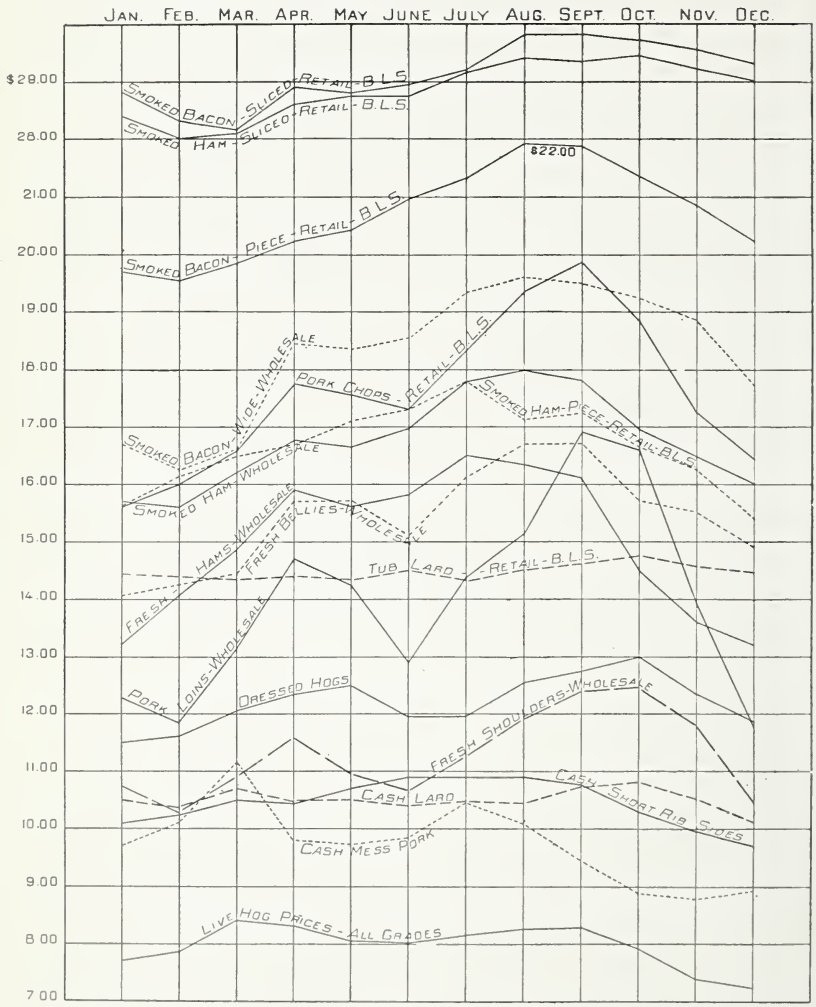
SHEEP; AVERAGE RECEIPTS BY MONTHS FOR FIVE YEARS, 1910-1914, AT SIX LEADING MARKETS.



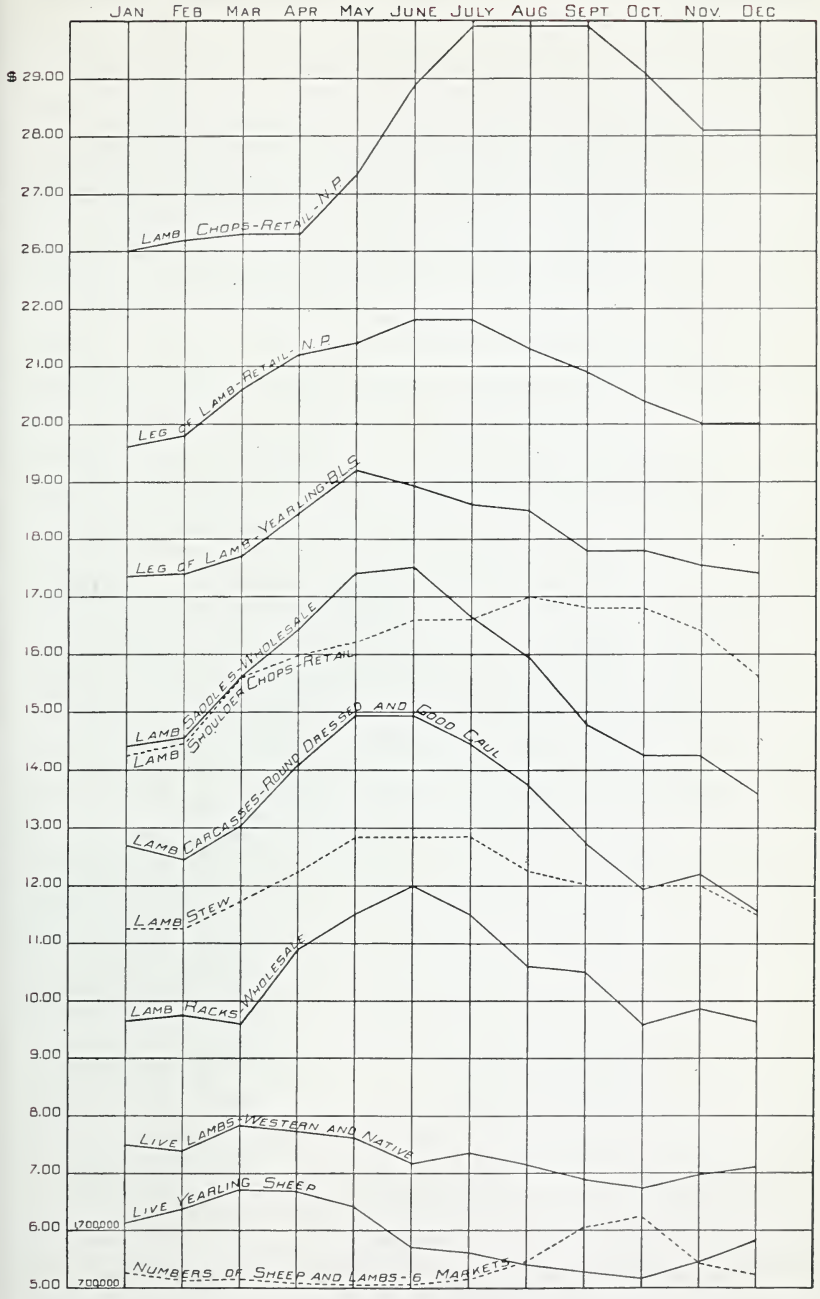
BEEF STEERS; CARCASSES, CUTS, AND BY-PRODUCTS; AVERAGE PRICES BY MONTHS, 1910-1914.



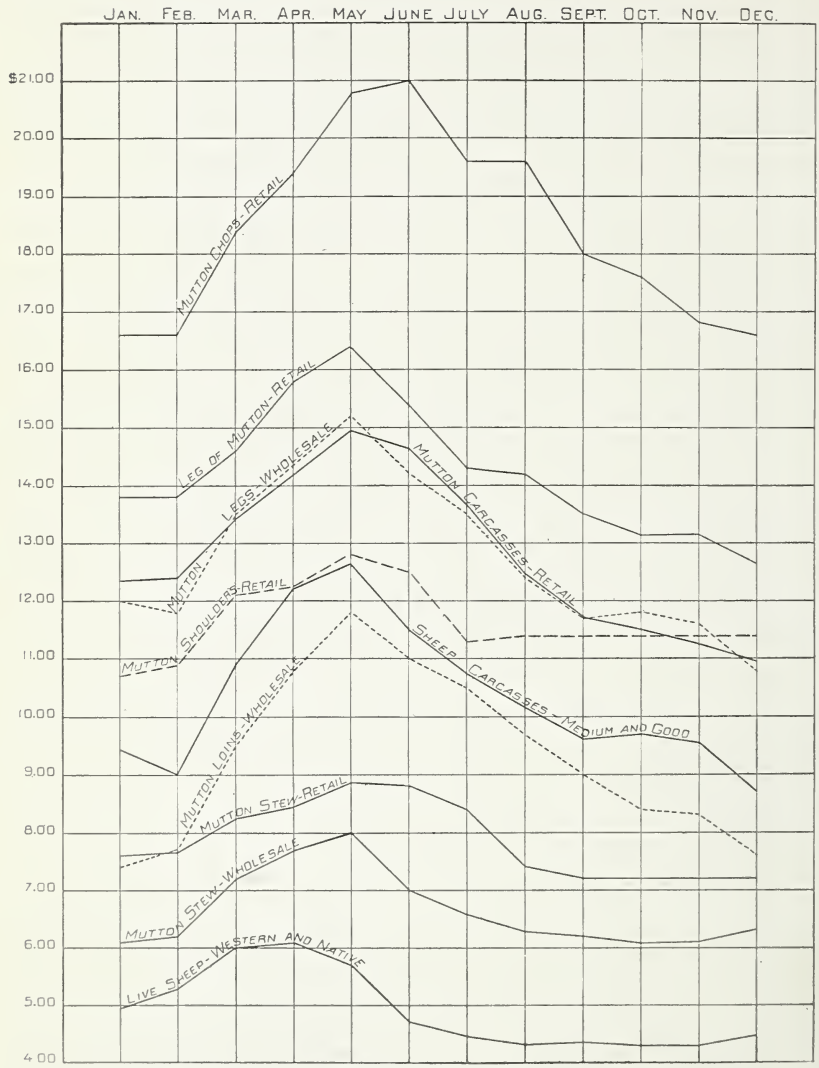
FAT COWS AND HEIFERS, CARCASSES AND CUTS; AVERAGE PRICES BY MONTHS, 1910-1914.



HOGS, CARCASSES, CUTS, AND LARD; AVERAGE PRICES BY MONTHS, 1910-1914.



LAMBS AND YEARLINGS, CARCASSES AND CUTS; AVERAGE PRICES BY MONTHS, 1910-1914.
SHEEP AND LAMBS; AVERAGE NUMBER AT SIX LEADING MARKETS, 1910-1914.



SHEEP CARCASSES AND CUTS; AVERAGE PRICES BY MONTHS, 1910-1914.

FAT COWS AND HEIFERS.

Plate IX, figure 1, shows the average monthly prices for fat cows and heifers. It is observed that prices of this class of cattle are normally highest in May. The supply of cows and heifers is limited at that time on account of the calving season, and prices are stimulated by the fact that the lower grades of steers also are scarce. A decline in prices in the fall is due partly to the large percentage of range cows and heifers in the butcher stock receipts. The lowest prices are paid for fat cows and heifers in December and January, when heavier beef of the better grades is in greater demand, and the lower grades are plentiful. Another reason for this decline is the fact that large numbers of rejected dairy cows are sent to the market at this time.

CUTTERS AND CANNERS.

The high points in prices paid for cutters and canners are the most irregular in occurrence of those for any class of cattle. Thus the five and ten year monthly price averages do not show any marked high or low spots. The general tendencies, however, resemble those noted in the case of fat cows and heifers, and the reasons assigned are similar. Plate IX, figure 2, shows the average prices by months on this class of cattle.

VEAL CALVES.

The spring run of calves from the dairy districts occurs chiefly from March to May, and accordingly the lowest prices prevail in April. After that time prices advance steadily to the high point in September. The average rise in prices from April to September, as shown here, has been from $7.84 to $10.23, or $2.39. In one month of the largest spring run the prices decline over one dollar and rise more slowly as the run subsides. The marketing of fall calves and reduced demand for veal causes a decline during the remainder of the year. Plate IX, figure 3, shows the monthly prices for five and ten year periods. The average weights of veal calves by months for five years also are shown, and a direct correlation between weights and prices of calves is apparent. The weights most in demand are 120 to 160 pounds, and as a large percentage of spring calves are too small to yield high class veal, a further reason for the low price in April is evident.

HOGS.

A report issued by the Bureau of Crop Estimates in January, 1916,[1] shows that 60 per cent of the pigs born each year are farrowed during March, April, and May. They are sent to the market eight to ten months later, weighing from 200 to 250 pounds. The time of year in which pigs are farrowed largely determines the date at which they will be ready for market, and thus seasonally affects the hog supply. The largest supply of hogs reaches the market in November, December, and January.

The average monthly prices of all classes of hogs, excluding mixed grades, for the years 1910–1914, inclusive, and the average

[1] United States Dept. of Agriculture, Bureau of Crop Estimates, Monthly Crop Report, vol. 2, No. 1, p. 11, 1916.

monthly price during all these years combined, are shown in Plate X. The five-year average prices show a difference of $1.23 between the months of March and December. Although the five-year monthly average shows March and April to be the high months, the individual years do not exhibit any regularity as to the period in which the highest prices are paid for hogs. The lowest prices, however, are found to be of most frequent occurrence in November and December. By following the curves for different years in Plate X, which indicate prices at Chicago and receipts of hogs at six leading markets, it will be noted that there is a general inverse relation between the variation in receipts and the prices of the same year. There also exists a correlation which shows the general level of prices in the years of largest receipts to be lower than those years in which a smaller number of hogs were marketed.

Plate XI shows the comparative monthly prices at Chicago of light, heavy, and all grades of hogs averaged for five years; the average monthly weight of hogs at Chicago for five years; and the average number of hogs packed at all the more important packing points, covering a period of five years. It is noticeable that light hogs normally sell at a higher price level than heavy grades during the spring and summer, but lower in the winter packing season. A comparison of average weights and prices indicates that when heavy hogs are the higher in price, the average weight is lower, and vice versa. The correlation between the prices of hogs and the numbers packed in the West is striking, the low points in the curves which shows the numbers packed being found in March and September, and the high prices for both light and heavy hogs, coinciding with those months. The reverse is true as regards the months in which the largest numbers and the lowest price averages are found.

SHEEP AND LAMBS.

Plate XII shows the average weekly prices for lambs during the five years 1910–1914. During this period prices have risen, on the average, $1.22 per hundredweight from the lowest point, the first week in November, to the highest, the last week of March. The average difference between prices prevailing in March and in October or November, the high and low points in the year's prices on sheep (native and western combined), has been the difference between $4.29 and $6.08, or $1.79 per hundredweight.

Plate XIII illustrates the average monthly prices at Chicago during each year from 1910 to 1914 on lambs (native and western combined); the five-year monthly average Chicago prices of sheep and lambs, respectively; the average weight of sheep and lambs by months at Chicago; and the average receipts of sheep by months at six leading markets. The maximum receipts of sheep and lambs and the minimum average weights and prices which are noted in September and October are due largely to the heavy fall run of sheep and lambs from the Western States.

Relative Prices of Live Stock, Meats, and Animal By-Products.

In order to compare the foregoing prices of meat animals with the corresponding prices on carcasses, cuts of meat, and by-products, the data illustrated by the following curves have been compiled

with reference to the products of beef steers, cows, and heifers, hogs, and sheep and lambs, respectively. The live-stock prices are from the same sources as those used in the preceding section. Quotations on meats and by-products are from trade journals and bulletins of the United States Department of Labor.[1] As explained in connection with the seasonal variations in prices of live stock, it should be borne in mind that the tendencies shown by the charts relative to monthly average prices of meat are due in part to differences in grade of the various products in question, as well as to variations in supply and demand. It should be stated also that comparatively little attention as yet has been given to the matter of reporting accurate and detailed quotations on the various classes and grades of meat, and the accompanying data are to be regarded merely as indicative of general tendencies and, approximately, of the margins between the classes of animals and products which they represent.

BEEF STEERS.

Monthly average prices of beef steers of all weights, beef carcasses, and wholesale and retail beef cuts are plotted in Plate XIV. It will be noted that quotations on the carcasses and cuts of meat, both wholesale and retail, follow the same general tendency with some exceptions as prices of live steers, being highest in the fall and lowest in the early winter. Variations in carcass beef prices tend to occur from one to two months later than those of live steers, and similar conditions are noted with reference to wholesale and retail cuts, respectively. As would be expected, the fluctuations are relatively least in the case of retail cuts, and are less pronounced, on a percentage basis, with respect to carcasses than live cattle.

On the whole the correlation between live stock and meat prices shown by these summaries is closer than generally is understood. It must be borne in mind, however, that daily fluctuations in live-stock quotations are frequent and sometimes violent, while meat prices from day to day follow more closely the general averages shown. Consequently the curves should not be interpreted as minimizing the important matter of variations within the monthly averages, but merely as indications of periodical price movements.

An adequate discussion of certain variations from the normal tendency, as noted relative to wholesale loins, ribs, and oleo stock, which are due to differences both in demand and quality of the supply, would require more extended investigations than have been conducted as yet. Generally speaking the cheaper cuts, such as chucks and rounds, are found to follow more nearly uniform price levels than the higher-priced cuts, such as loins and ribs, both at wholesale and retail. The figures for each year bear out the general conclusions indicated by the five-year averages shown by the curves. The foregoing remarks also apply, as a rule, to other classes of animals and their products, as shown by the following data (Pls. XV to XVIII) relative to "butcher cattle," hogs, sheep, and lambs. Brief comments on those figures therefore will be sufficient for the present purpose.

[1] Live-stock prices illustrated by Plates XIV to XVII were compiled from the Chicago Daily Farmers and Drovers Journal, Yearbooks of Figures, 1910 to 1914. Prices of carcasses and wholesale cuts were compiled from files of the National Provisioner, and retail meat prices from bulletins of the United States Department of Labor, Bureau of Labor Statistics, except where otherwise indicated. N. P. denotes National Provisioner; and B. L. S., Bureau of Labor Statistics.

Prices on cow carcasses and on wholesale cow chucks reach the high point in May, the same as live cows (see Pl. XV). Rounds are highest a month later, while cow loins and ribs have a tendency to decline in midsummer and sell highest in early fall, following a course similar to that of prices on steer loins and ribs. Heifer carcasses tend to average highest in late fall, and lowest in midwinter. Wholesale quotations on heifer cuts, and prices of retail cuts from heifers and cows were not accessible in such form as to be comparable with the data which Plate XV represents, but it is believed that the general tendencies of the retail prices should be similar to those shown in Plate XIV.

PORK.

Prices of dressed hogs and of various wholesale and retail cuts, in comparison with live-hog prices, are shown in Plate XVI. It is observed that the quotations on hog carcasses follow the same general trend as live hog prices in that they are relatively high in the spring and fall, reduced in midsummer, and at a minimum in December and January. The average advances and declines on live hogs, however, precede those quoted on hog carcasses by one to two months.

The hog products on which futures are bought and sold on the board of trade, viz, short rib sides, mess pork, and lard, vary in average price along a course intermediate between that of live and that of dressed hogs. The same is true, generally speaking, of the various wholesale and retail cuts. The correlation is most nearly uniform in the case of wholesale fresh pork loins and shoulders, and retail pork chops; the latter being cut from the two former. Prices on cured meats, such as smoked hams and bacon, both wholesale and retail, show the least degree of correlation with the general trend.

LAMB.

Prices of lamb carcasses, as shown in Plate XVII, reach their maximum in May and June and their minimum in December, following about two months after the corresponding variations in live lambs and yearlings from which they are obtained. Wholesale lamb cuts also tend to sell highest at a period one to two months later than carcasses of lamb, and a still more pronounced tendency in the same direction applies to retail cuts. The relatively high average prices on lamb chops during July to September indicate in part the demand for small cuts of lamb as a hot-weather meat, and are due also to the high grades of lamb available at that period.

MUTTON.

A comparison of wholesale and retail mutton prices with those of live sheep (Pl. XVIII) indicates general tendencies very similar to those which are characteristic of lambs, excepting that retail prices correspond much more closely to wholesale and live mutton quotations. Retail mutton chops decline during the summer months, when lamb chops are high; and it is observed that both dressed carcasses and wholesale cuts of mutton respond more rapidly to changes in the sheep market than in the case of lambs. In fact, the average prices

of sheep and mutton show the closest correlations of any class of meat animals and their products considered in this summary. The tendency for cheaper cuts, such as mutton and lamb stew, to sell at more uniform prices than the more expensive meats also is illustrated by these plates.

MARGINS ON SELECTED LOTS OF CATTLE.

The investigations described in the following pages were conducted for the purpose of securing data on the relative cost of the different factors or steps in the processes of marketing meat animals and distributing their products and by-products; also to show the proportions in which the consumer's dollar is distributed among the respective classes of interests concerned. The data to be presented consist of marketing records of typical lots of cattle and of the beef and by-products yielded by them, which records were obtained by means of personal investigation in the fall of 1914. The lots were chosen to illustrate various types of animals and different markets and sections of the country. The records represent the various transactions and operations involved in the handling of meat animals and their products through the consecutive stages of distribution from the producer to the consumer, including the shipment, handling, sale, and slaughter of the live animals and the wholesale and retail disposition of the meat. Abnormal conditions created by the European war and the epidemic of foot-and-mouth disease, both of which occurred during the progress of the investigations, curtailed the work that had been planned. The data, however, represent the first extensive investigations ever conducted for the purpose of tracing the disposal of meat animals in this way, so far as the Department of Agriculture is aware. These investigations were confined to cattle in order to render the results somewhat comparable and in consideration of the limited time available for the work. Owing to the volume and detail of the data contained in the records of the various shipments, they have been condensed and summarized for the purposes of the text, and the itemized statements are given for reference. The subject will be presented in two divisions, dealing with animals sold at centralized and local markets, respectively.

Cattle Shipped to Centralized Markets.

The investigation of shipments which were marketed at the large stockyard centers began in most instances with a personal inspection of the delivery and loading of the cattle at the local railroad shipping stations. Some of the lots were selected at the markets, the facts concerning their previous handling being furnished by the owner or by the commission firm to which the cattle were consigned. In each case the slaughter test was supervised by one or more of the writers and representative carcasses of the lot were traced in person to the branch houses and retail markets through which they were distributed.

The various lots were marketed during the period from August to November, 1914. Early in November it became necessary to discontinue the investigations at centralized markets on account of the quarantines which were established to prevent the spread of

foot-and-mouth disease; for this reason some of the more important markets and live-stock growing and feeding sections are not represented in the following records.

Some of the weights and prices could be secured only indirectly through the courtesy of the packers and meat dealers concerned, and although they are believed to be substantially correct, they must be regarded only as results of preliminary investigations on this complex subject.

Nine lots of cattle which were marketed at the large stockyards centers are comprised in the accounts summarized in this section. The grades of cattle and their sources and disposition are described under each lot.

SUMMARY OF ACCOUNTS.

The itemized accounts of the nine shipments of cattle, as given on pages 73 to 98, are divided, in each instance, into three parts, viz, (1) account sales on live cattle, (2) slaughtering and wholesaling of beef and by-products, and (3) retail meat market accounts. These accounts typify the nature and amounts of the various expenses involved in marketing live cattle under characteristic conditions, and the relative returns realized on beef products and by-products by wholesale packers and retail dealers. The cost of operation is not shown by these accounts, and although data on operating expenses were obtained relative to all of the lots, the figures as a whole on that point are not regarded as sufficiently well substantiated nor complete to warrant their publication at this time.

In considering the returns shown by the wholesale and retail beef accounts, it is important to bear in mind that the beef trade was in a depressed condition in keeping with other lines of business during the fall months, following the opening of the European war, at which time these records were taken. Although both cattle and beef prices were relatively high, the demand was abnormally small, and the margins shown by these accounts, both wholesale and retail, are therefore materially lower in general than is the case under normal conditions.

In addition to the actual accounts on each lot as a whole, the statements also are computed to terms of one animal in each instance as a basis for comparison. A summary of the latter statements is contained in Table 42, which shows the total proceeds of beef and by-products per head for each lot, and the percentages of the total returns received by the stockman, by the transportation and market interests, by the packer and by the retailer, respectively. These ratios must not be misconstrued as percentages of profit. They represent only the proportions of the final returns, i. e., the receipts for beef at retail and by-products at wholesale, which are comprised in the gross amount retained by each of the four classes of interests concerned. Conclusive data on net profits realized are not yet available.

TABLE 42.—*Distribution of proceeds of nine lots of cattle marketed through centralized markets, including beef and by-products.*

Item.	Lot 1.	Lot 2.	Lot 3.	Lot 4.	Lot 5.	Lot 6.	Lot 7.	Lot 8.	Lot 9.
Amount per head:									
Returns to producer	$155.06	$142.18	$89.67	$57.17	$99.71	$75.62	$89.26	$37.82	$68.84
Shipping and marketing expenses	2.85	2.51	7.19	7.16	2.43	2.38	3.41	2.80	1.65
Packers' gross margin[2]	16.50	7.22	12.53	6.24	4.96	1.72	8.57	3.39	5.78
Retailers' gross margin[2]	21.12	14.06	54.58	[1] 1.35	19.31	12.91	30.01	12.29	12.24
Total	195.53	165.97	163.97	71.95	126.41	92.63	131.31	56.30	88.51
Percentage basis:	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Returns to producer	79.29	85.67	54.69	79.49	78.88	81.64	67.97	67.18	77.78
Shipping and marketing expenses	1.46	1.51	4.38	9.95	1.92	2.57	2.60	4.97	1.86
Packers' gross margin[2]	8.44	4.35	7.64	8.68	3.92	1.86	6.53	6.02	6.53
Retailers' gross margin[2]	10.81	8.47	33.29	1.88	15.28	13.93	22.90	21.83	13.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1] Jobber.
[2] These margins are the gross differences between cost and proceeds in each instance; hence they represent all expenses plus profits.

From the preceding recapitulation of accounts it will he noted that 54 to 85 per cent (omitting decimals) of the gross returns was received by the stockmen; 1.5 to 5 per cent, and in one lot, 10 per cent consisted in shipping and stockyards expenses; approximately 2 to 8.5 per cent went to the packer; 8 to 33 per cent to the retailer, and in one instance less than 2 per cent to a jobber. The striking variation shown by the accounts of the different lots are due in part to differences in the distances the cattle and beef were shipped, as well as in classes of trade and conditions under which the products were sold. Considering these variations it may be said that the distribution of returns indicated by the data is approximately two-thirds to three-fourths to the stockman, 3 to 4 per cent shipping and stockyards expense, 5 to 6 per cent packing and wholesale distribution, and 15 to 20 per cent retailing.

Again, it should be remembered that these figures are not margins of profit. Reference to the itemized accounts will show that the retailer's gross margin, based on wholesale cost of the beef, varied from 5.74 to 61.81 per cent, the average being 26.32 per cent. Likewise, the cost of marketing live cattle, including shipping and marketing expenses, varied from 1.8 per cent in lot 2 to 12.5 per cent in lot 4. Similar computations from data on the cost of marketing baby beef steers [1] indicate marketing expenses of 1.5 to 3.5 per cent of the value of the cattle.

Further, the spread between prices of live stock and meats usually is wider than at the time of these investigations. Consequently the above proportions charged to the stockmen and to shipping and marketing expenses are larger, and those shown for the packer and retailer are somewhat smaller than under normal conditions, but, on the whole, the range of relative returns shown by the above summary indicates approximately the extent to which the different interests participate in the cost of marketing cattle and the distribution of beef.

In the absence of similar data on actual shipments of hogs and sheep, the following statistics, compiled at the University of Minne-

[1] See Report No. 111 of this series, p. 64.

sota [1] with reference to animals from that State marketed and slaughtered at South St. Paul, are cited for comparison.

TABLE 43.—*Summary of marketing costs and distribution of gross returns for a 1,000-pound beef, a 230-pound hog, and an 80-pound sheep on the basis of the consumer's price.*

	Cattle.		Hogs.		Sheep	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
Farmer receives	$60.07	60.5	$18.01	60.2	$4.53	62.2
Freight, yardage, feed, etc.	2.43	2.4	.62	2.1	.27	3.7
Packer's gross returns	11.21	11.3	4.59	15.4	.87	12.0
Retailer's gross returns	25.55	[a] 25.8	6.67	[a] 22.3	1.61	[a] 22.1
Total value	99.26	100.0	29.89	100.0	7.28	100.0

[a] It should be noted that these returns for retailers are expressed as per cents of the total receipts; i. e., on final retail price of carcass plus the amounts received by packers for by-products. They are not comparable with the retailers' cost of doing business, and should be used with care.

CATTLE MARKETED LOCALLY.

Records of cattle sold to local butchers, including disposal of the beef and by-products, were obtained at various places in five States representing different sections of the country. The plan of the investigation was similar to that described in the preceding section. The investigations were conducted in November and December, 1914.

A farmers' cooperative packing company purchased and slaughtered the cow marketed at La Crosse, Wis. (lot 11). The animal slaughtered at Paris, Tex. (lot 12), was handled at the municipal abattoir, which is one of the few city-owned slaughtering plants in the United States. The remainder of the investigations in this group relate to local butchers who both slaughtered the animals and retailed the meat. Similar investigations were conducted at points in Minnesota, Illinois, and Michigan, but portions of the data pertaining to the proceeds of the beef were so incomplete or unreliable that the records were not considered suitable for publication. Itemized accounts on the five animals used in these investigations are given on pages 94 to 98, and a recapitulation is shown by Table 44:

TABLE 44.—*Distribution of proceeds of five lots of cattle marketed locally, including beef and by-products.*

	Lot 10.	Lot 11.	Lot 12.	Lot 13.	Lot 14.
Amount per head:					
Returns to producer	$92.85	$43.20	$45.38	$66.95	$66.00
Gross margin to retail butchers	17.79	[a] 11.84 12.81	27.91	29.80	22.46
Total	110.64	67.85	73.29	96.75	88.46
Percentage basis:	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Returns to producer	83.93	63.67	61.92	69.20	74.61
Gross margin to retail butchers	16.08	[a] 17.45 18.88	38.08	30.80	25.39
Total	100.00	100.00	100.00	100.00	100.00

[a] Gross margin of cooperative packing company.

[1] Warner, K. F., The Marketing of Live Stock Products in Minnesota (studies in the Social Sciences. No. 4, pp. 15–38).

FIG. 1.—PRIME STEERS, LOT 1.

FIG. 2.—HINDQUARTERS AND RIBS, LOT 1.

FIG. 1.—DROVE OF GOOD WESTERN STEERS FROM WHICH LOT 3 WAS SELECTED.

FIG. 2.—COMMON MEXICAN STEERS, LOT 4.

From 62 to 84 per cent of the gross returns on these cattle were received by the owner; while the retail butcher's proportion of the proceeds was from 16 to 38 per cent. These accounts, together with estimates from other sources, indicate that farmers ordinarily receive about two-thirds and the retailer about one-third of the total proceeds of cattle killed by local butchers. In general it is apparent that farmers receive smaller relative returns from cattle marketed locally than from those that are shipped to centralized markets. The ratios appear to be determined to some extent by the grade of the cattle as well as the method of marketing, the farmer's share being smaller according as the cattle are of lower grade. The results strongly indicate, however, that the saving of the freight, stockyards charges, commissions, and other expenses, which saving is effected by selling locally, usually is absorbed by the butcher and does not find its way to the producer.

Itemized Accounts.

Lot No. 1.

Lot No. 1 consisted of one carload, containing 18 prime Aberdeen Angus steers (see Pl. XIX, figs. 1 and 2), bred and fed by the owner in Henry County, Ill. They were calved in the spring of 1912, suckled their dams on pasture till weaning time, and received grain and hay through the following winter. The next summer they ran on pasture and were then fed clover and alfalfa hay until January 15, 1914. One-half corn ration was fed the steers until March 1, when a full feed of corn with alfalfa hay was given in the dry lot until marketing.

The steers were shipped from Cambridge, Ill., August 25, 1914, and sold at the Union Stockyards, Chicago, August 26. They were reshipped to New York City on the same date, where they were slaughtered August 30, 1914.

ACCOUNT SALES ON LIVE CATTLE.

18 steers, 26,690 pounds (Chicago weight), at $10.65		$2,842.48
Freight, Cambridge, Ill., to Chicago (railroad weight 25,200 pounds, at $0.126 hundredweight, plus $2 terminal charge)	$33.75	
Yardage, at 25 cents per head	4.50	
Fire insurance, at 10 cents per car	.10	
Hay	1.25	
Commission, $10 per car, plus 5 cents per hundredweight on weight in excess of 23,000 pounds	11.80	
		51.40
Proceeds to shipper		2,791.08

SLAUGHTERING AND WHOLESALING.

18 steers, 26,690 pounds (Chicago weight), at $10.65, shipped to New York alive		$2,842.48
Feed and bedding in cars at Chicago	$4.00	
Feed en route at feeding station	5.00	
Freight, Chicago to New York (at 28 cents per hundredweight)	71.93	80.93
Cost of steers delivered at New York City (weight 24,600 pounds)		2,923.41

Proceeds:

Dressed beef.	Number.	Weight.	Price.	Amount.
		Pounds.	*Cents.*	
Plates	34	1,660	13.00	$215.80
Chucks and plates	2	283	15.62	44.25
Chucks	34	4,980	16.41	817.65
Ribs	14	666	18.92	126.05
Hinds	14	2,678	17.79	476.42
Hinds and plates	22	5,922	17.74	1,050.63
Total or average	120	16,189	16.58	2,730.80

Proceeds—Continued.			
Hides[1]—			
15 spready steer hides, 1,347 pounds, at $15.90 per hundredweight	$214.17		
3 cutthroat native hides, 253 pounds, at $15.40 per hundredweight	38.96		
		$253.13	
Oleo fats,[2] 1,819 pounds, average $8.05 per hundredweight		146.42	
Offal, as per following items		90.16	
Livers, 17 (1 condemned), 212 pounds, at 12 cents per pound	25.44		
Hearts, 18, 77 pounds, at 6 cents per pound	4.62		
Tails, 18, at 10 cents each	1.80		
Tongues, 18, 187 pounds, at $1.05 each	18.90		
Brains, 18, at 8 cents each	1.44		
Sweetbreads, 18, 7 pounds, at 30 cents per pound	2.10		
Melts, 18, at 6 cents each	1.08		
Lungs, 18, at 5 cents per set	.90		
Raw tripe, 396 pounds, at 1½ cents per pound	5.94		
Switches, 18, at 3 cents each	.54		
Cheek meat, 96 pounds, at 9½ cents per pound	9.12		
Head meat, 21 pounds, at 8½ cents per pound	1.78		
Ox lips, 9½ pounds, at 5 cents per pound	.46		
Skull bones, 234 pounds, at $20 per ton	2.34		
Feet, 18 sets, 344 pounds, at $27 per ton	4.64		
Heart caps, 7¾ pounds, at 3½ cents per pound	.27		
Blood (estimated 8 pounds per head), 144 pounds, at $40 per ton	2.88		
Tankage (estimated 4 pounds per head), 72 pounds, at $20 per ton	.72		
Tallow (estimated 5 pounds per head), 90 pounds, at 5½ cents per pound	4.95		
	89.92		
Less expense selling small offal, 830 pounds, at 75 cents per hundredweight	6.22		
Green value edible offal		83.70	
Casings—			
Rounds—			
Export, 7 sets, at 26½ cents per set	1.85		
Domestic, 9½ sets, at 20 cents per set	1.90		
Stumps, ¼ set, at 10 cents per set	.02		
Middles, regular, 6½ sets, at 72 cents per set	4.68		
Bungs, 18 sets, at 22 cents per set	3.96		
Weasands, 17 sets, at 6 cents per set	1.02		
Bladders, 17 sets, at 3½ cents per set	.59		
	14.02		
Less expense, 42 cents per set	7.56		
Green value casings	6.46		
Total value of offal		90.10	
Total proceeds to packer			$3,087.86
Gross margin to packer			297.04

RETAIL ACCOUNTS.

1. Dealer at Old Washington Market, New York City.

Bought 2 hinds and ribs, 632 pounds, at 17½ cents			$110.60
Sold:			
2 ribs, 114 pounds, at 21 cents (consists of 28 cents for first cut, 16 cents for last cut)	$23.94		
2 loins, 159 pounds, at 21 cents	33.39		
2 short loins, 145 pounds	39.15		
2 hips, 100 pounds, at 20 cents	20.00		
2 shins, 36 pounds, at 7 cents	2.52		
Suet, 40 pounds, at 5 cents	2.00		
Flank, 35 pounds, at 7 cents	2.45		
Total, 629 pounds			123.45
Gross margin			12.85
Per cent gross margin, 11.62.			

[1] Basis for figuring hides:

Cured market value of hides	per hundredweight	$21.00
Shrinkage, 20 per cent	$4.20	
Curing expenses	.90	
		5.10
Green value kosher spreadies		15.90
Green value cuthroat natives (½ cent per pound less)		15.40

[2] Basis for figuring fat

Oleo fats, 1,819, pounds—

No. 1 oil, 67 per cent, 13½ pounds yield estimated	$9.045	No. 1 stock, 52 per cent, $11.59	$6.02
		No. 2 stock, 16½ per cent, $11.25	1.85
No. 1 stearine, 3 per cent, 11½ pounds yield estimated	3.795	No. 3 stock, 1½ per cent, 9½ cents	.12
		Tallow, ¾ per cent, 6¼ cents	.06
	12.840		8.05
Less expense per hundredweight	1.25		
	11.59		

No. 2 oil wotrh one-half cent less than No. 1.

2. Dealer at Old Washington Market, New York City.		
Bought 1 hind and rib (188 pounds hind, 49 pounds rib), 237 pounds, at 17½ cents		$41.48
Sold:		
Ribs, first, 4¾ pounds, at 25 cents	$1.18	
Ribs, second and third, 9 pounds, at 25 cents	2.25	
Ribs, fourth, fifth, and sixth, 17½ pounds, at 25 cents	4.38	
Ribs, eighth and ninth, short cut, 11 pounds, at 20 cents	2.20	
Plate piece, 4 pounds, at 16 cents	.64	
Round with flank—		
Shin, 12½ pounds, at 10 cents	1.25	
Top round, 25½ pounds, at 26 cents	6.63	
Bottom round, 26½ pounds, at 24 cents	6.36	
Horseshoe, 2½ pounds, at 18 cents	.40	
Outside flank, 4 pounds, at 16 cents	.64	
Flank steak, 3 pounds, at 18 cents	.54	
Trimmings, 2¼ pounds, at 18 cents	.40	
Loin—		
Porterhouse steaks, 30 pounds, at 32 cents	9.60	
Sirloin steaks, 25 pounds, at 26 cents	6.50	
Top sirloin, 13¾ pounds, at 25 cents	3.44	
Kidney, 1½ pounds, at 15 cents each	.15	
Suet, 22 pounds, at 5½ cents	1.21	
Shop fat, 14½ pounds, at 3½ cents	.47	
Bones, 7¼ pounds, at 35 cents per hundredweight	.03	
Total, 236½ pounds		48.27
Gross margin		6.79
Per cent gross margin, 16.37.		
3. Dealer at Englewood, N. J.		
Bought 4 hinds and ribs, 982 pounds, at 18 cents		176.76
Sold:		
60 pounds shin, at 10 cents	6.00	
20 pounds horseshoe, at 18 cents	3.60	
100 pounds top round, at 28 cents	28.00	
130 pounds bottom round, at 22 cents	28.60	
30 pounds flank, at 20 cents	6.00	
28 pounds cod fat, at 4½ cents	1.26	
40 pounds suet, at 4½ cents	1.80	
74 pounds top sirloin, at 22 cents	16.28	
180 pounds short loins, at 30 cents	54.00	
200 pounds ribs, at 24 cents	48.00	
120 pounds hips, at 25 cents	30.00	
982 pounds (total)		223.54
Gross margin		46.78
Per cent gross margin, 26.47.		
4. Dealer, East One hundred and seventeenth Street, New York City.		
Bought 1 kosher chuck, 145 pounds, at 16½ cents		23.93
Sold:		
5 pounds fat, at 2¾ cents	.14	
12 pounds fat, at 3¾ cents	.45	
26 pounds meat, at 28 cents	7.28	
82 pounds meat, at 22 cents	18.04	
20 pounds bones given with meat		
145 pounds (total)		25.91
Gross margin		1.98
Per cent gross margin, 8.27.		

SUMMARY OF STATEMENTS ON LOT 1.

[On basis of 1 animal.]

Shipment and marketing of live cattle:		
Returns per steer at Chicago, 1,483 pounds, at $10.65 per hundredweight		$157.94
Marketing expenses—		
Freight and terminal switching	$1.86	
Yardage	.25	
Feed and insurance	.08	
Commission	.66	
		2.85
Proceeds to producer		155.09
Slaughtering and wholesaling:		
Cost of live steer to packer	157.94	
Freight, bedding, and feed to New York City	4.50	
Gross cost of steer at New York		162.44
Proceeds—		
Beef, 899.4 pounds, average 16.86 cents	151.64	
Hide, 88.8 pounds, average 15.82 cents	14.06	
Oleo fat, 101.1 pounds, average 8.05 cents	8.13	
Offal	5.01	
		178.84
Gross margin to packer		16.40

Retailing:	
Cost of beef to retailer	$151.64
Proceeds of beef[1]	172.76
Gross margin to retailer	21.12

Lot No. 2.

Two carloads containing 34 choice 2-year-old Shorthorn type steers comprised lot No. 2. They had been bought as feeders at Chicago, February 6, 1914. They were fed in the dry lot on shock corn from Ferbruary 8 to April 1, after which they received a full feed of ear corn, clover hay, and cottonseed cake.

The cattle were shipped from Scottland, Ill., August 25, 1914, and sold at the Union Stock Yards, Chicago, August 26. On the same date they were shipped to New York City and slaughtered August 30, 1914.

ACCOUNT SALES ON LIVE CATTLE.

35 steers, 49,810 pounds (Chicago weight), at $10.35	$5,155.33	
34 steers,[2] 47,530 pounds (Chicago weight), at $10.35	4,919.35	
1 steer, 1,270 pounds, at $10.35	131.44	
1 steer, 1,090 pounds, at $8	87.20	
1 steer, 960 pounds, retained for inspection		
		10,293.32
Freight, Scotland, Ill., to Chicago, railroad weight, 4 cars, 98,800 pounds, at 10.8 cents per hundredweight, plus $2 per car terminal charge	114.71	
Yardage, at 25 cents per head	18.00	
Fire insurance, 4 cars, at 10 cents per car	.40	
Tame hay, 300 pounds	3.75	
Commission, $10 per car, plus 5 cents per hundredweight on weight in excess of 23,000 pounds per car	43.85	
		180.71
Proceeds to shipper		10,112.61

SLAUGHTERING AND WHOLESALING.

34 steers, 47,530 pounds (Chicago weight), at $10.35		$4,919.35
Hay and bedding in cars at Chicago	$4.00	
Freight, Chicago to New York, at 28 cents per hundredweight	135.31	
Feed en route at feeding station	3.07	
Hay in pens at New York	1.49	
		143.87
Cost of steers delivered at New York City		5,063.22

Proceeds:

Dressed beef.	Number.	Weight.	Price.	Amount.
		Pounds.	*Cents.*	
Chucks and plates	58	10,247	15.31	$1,569.03
Plates	10	441	13.53	59.69
Chucks	9	1,086	15.90	173.22
Short chucks	1	61	15.00	9.15
Shoulder and brisket	1	77	14.50	11.17
Hinds and ribs	68	16,273	16.01	2,605.72
Total or average	147	28,185	15.04	4,427.98

Hides:			
5 butt branded	387 pounds, at 14.97 cents per hundredweight		$57.93
7 colorados	551 pounds, at 14.82 cents per hundredweight		81.66
22 spreadies	1,857 pounds, at 16.09 cents per hundredweight		298.79
34 hides	2,795 pounds		$438.38
Oleo fats, 3,342 pounds oil fats, at $8.12 per hundredweight			271.37

[1] Proceeds are based on average gross margin as follows:

	Per cent.
Average margin on hinds and ribs (57.24 per cent of carcass weight)	18.15
Average margin on chucks and plates (42.76 per cent of carcass weight)	8.27
Average margin based on weight of carcass	13.93

[2] 34 steers comprised in following statements.

Proceeds—Continued.		
Offal:		
Head meat, 219 pounds, at 7½ cents per pound	$16.43	
Livers, 31 pieces, 382 pounds, at $11.09 per hundredweight	42.36	
Hearts, 34 pieces, at 23 cents each	7.82	
Tails, 34 pieces, at 9 cents each	3.06	
Brains, 32 pieces, at 9 cents each	2.88	
Sweetbreads, 34 pieces, 9½ pounds, at 27 cents per pound	2.56	
Beef tenders, 34 pieces, 76 pounds, at 11 cents per pound	8.36	
Lungs, 34 pieces, at 4 cents each	1.36	
Melts, 34 pieces, at 5 cents each	1.70	
Tongues, 32 pieces, 276 pounds, at $12.37 per hundredweight	34.14	
Bellies, 34 pieces, at 20 cents each	6.80	
Casings, 34 sets, at 50 cents	17.00	
Feet, 136 pieces, 635 pounds, at $1.22½ per hundredweight	7.78	
Skulls, jaws, and tops, 32 pieces, 475 pounds, at 1 cent per pound	4.75	
Blood, at 13½ cents per head	4.59	
Tankage, at 20 cents head	6.80	
Switches, 24, at 4 cents each	1.36	
Wind pipes, 30 pounds, at ¾ cents per pound	.23	
Pizzles, 15 pounds, at 1 cent per pound	.15	
Livers, 46 pounds, at 10 cents per hundredweight	.05	
Heads, 84 pounds, at 95 cents per hundredweight	.80	
		$170.98
Total proceeds to packer		5,308.71

RETAIL ACCOUNTS.

1. Dealer on East Seventeenth Street, New York City.

Bought 4 hinds and ribs, 908 pounds, at 16 cents		$145.28
Sold:		
12 pounds flank stew, at 14 cents	$1.68	
10 pounds flank steak, at 18 cents	1.80	
5 pounds kidneys, at 12 cents	.60	
39 pounds fat and suet, at 5 cents	1.95	
17 pounds shop fat, at 2 cents	.34	
160 pounds ribs, at 18½ cents	29.60	
62 pounds shins, at 6 cents	3.72	
8 pounds soup bones	.....	
95 pounds top rounds, at 19 cents	18.05	
137 pounds bottom rounds, at 19 cents	26.03	
205 pounds hips, at 18½ cents	37.93	
168 pounds short loins, at 19 cents	31.92	
918 pounds (total)		153.62
Gross margin		8.34

Per cent gross margin, 5.74.

2. Dealer on Seventh Avenue, near One hundred and twenty-fourth Street, New York City.

Bought 1 hind and rib,[1] 230 pounds, at 17 cents		$39.10
Sold:		
28½ pounds sirloin steak, at 30 cents	$8.55	
27 pounds porterhouse steak, at 34 cents	9.18	
17 pounds top round, at 28 cents	4.76	
12½ pounds bottom round, at 24 cents	3.00	
19 pounds top sirloin, at 20 cents	3.80	
19½ pounds rump, at 19 cents	3.66	
7½ pounds horseshoe, at 18 cents	1.35	
2¾ pounds flank steak, at 20 cents	.55	
5 pounds outside flank, at 14 cents	.70	
11 pounds shin beef, at 10 cents	1.10	
13 pounds suet, at 5 cents	.65	
7½ pounds flank fat, at 5 cents	.38	
1¼ pounds kidney, at 14 cents	.18	
6¾ pounds shop fat, at 2½ cents	.17	
9 pounds bones	.00	
25½ pounds rib, at 24 cents	6.12	
17½ pounds rib, at 18 cents	3.15	
230 pounds (total)		47.30
Gross margin		8.20

Per cent gross margin, 20.97.

[1] This test represents 6 hinds and ribs, 1,402 pounds of same lot bought by this dealer.

3. Dealer on Columbus Avenue, near Seventieth Street, New York City.		
Bought 2 hinds and ribs,[1] 455 pounds, at 16½ cents		$75.08
Sold:		
4 pounds flank steak, at 22 cents	$0.88	
60 pounds suet, at 6 cents	3.60	
10 pounds flank, at 15 cents	1.50	
2 pounds kidneys, at 15 cents	.30	
30 pounds top sirloin, at 22 cents	6.60	
40 pounds round steak, at 25 cents	10.00	
50 pounds rump steak, at 22 cents	11.00	
15 pounds soup meat, at 20 cents	3.00	
25 pounds legs beef, at 8 cents	2.00	
45 pounds porterhouse steak, at 32 cents	14.40	
45 pounds sirloin steak, at 28 cents	12.60	
45 pounds ribs, at 25 cents	11.25	
30 pounds chuck rib, at 18 cents	5.40	
40 pounds fat, at 2½ cents	1.00	
441 pounds (total)		83.53
Gross margin		8.45
Per cent gross margin, 11.25.		

NOTE.—Satisfactory data on retailing of chucks and plates of this lot were not obtainable. The grade of beef being closely similar to that of Lot 1, the retail accounts of chucks and plates from that lot are representative of the corresponding cuts of Lot 2.

SUMMARY OF STATEMENTS ON LOT 2.

[On basis of 1 animal.]

Shipment and marketing of live cattle:		
Returns per steer at Chicago, 1,398 pounds, at $10.35 per hundredweight		$144.69
Marketing expenses—		
Freight and terminal switching	$1.59	
Yardage	.25	
Feed and insurance	.06	
Commission	.61	
Total		2.51
Proceeds to producer		142.18
Slaughtering and wholesaling:		
Cost of live steer to packer	144.69	
Freight, bedding, and feed to New York City	4.23	
Gross cost of steer at New York		148.92
Proceeds—		
Beef, 829 pounds, average 15.71 cents	130.24	
Hide, 82.2 pounds, average 15.68 cents	12.89	
Oleo fat, 98.3 pounds, average 8.12 cents	7.98	
Offal	5.03	
Total		156.14
Gross margin to packer		7.22
Retailing:		
Cost of beef to retailer		130.24
Proceeds of beef[2]		144.30
Gross margin to retailer		14.06

Lot No. 3.

Lot No. 3 consisted of 31 good western steers (see Pl. XX, fig. 1), which had been grazed in the Milk River country of Montana. They were shipped in a trainload of similar cattle which had been shipped as long yearlings from the breeding grounds of Arizona, New Mexico, and Texas, and run in Montana three summers and two winters, being marketed as 4-year-old steers.

At the end of a 10 days' round-up these steers were loaded with 48 cars of cattle and shipped from Malta, Mont., on September 4, 1914. En route they were unloaded for feed, water, and rest at New Rockford, N. Dak., and St. Paul, Minn. They arrived at Chicago September 9, were sold on the same date, and slaughtered the following day at one of the large packing houses. The beef was distributed through branch houses at Boston and Lynn, Mass.; Providence, R. I.; Wilmington, Del.; and Dover, N. J.

[1] This test represents 12 hinds and ribs, 2,674 pounds, of same lot bought by this dealer.

[2] Proceeds are based on average gross margins as follows:

	Per cent.
Average margins on hinds and ribs (57.74 per cent of carcass weight)	12.65
Average margins on chucks and plates (42.26 per cent of carcass weight)	8.27
Average margin based on weight of carcass	10.80

ACCOUNT SALES ON LIVE CATTLE.

61 steers,[1] (Chicago weight), 74,520 pounds, at $8		$5,961.60	
5 steers,[1] 5,730 pounds, at $8		458.40	
260 steers, 291,490 pounds, at $7.55		22,007.49	
289 steers, 318,000 pounds, at $7.55		24,009.00	
17 steers, 18,260 pounds, at $6.80		1,241.68	
632 steers (total)			$53,678.17
Freight from Malta, Mont., to Chicago:			
705,800 pounds, at 54 cents per hundredweight	$3,811.32		
Less freight on 17 strays	110.83		
Net freight charge	3,700.49		
Terminal charge, 25 cars, at $2	50.00		
Total		3,750.49	
Feed in transit:			
New Rockford, N. Dak	72.00		
South St. Paul, Minn	71.25		
		143.25	
Yardage, at 25 cents per head	158.00		
Fire insurance, 24 cars, at 10 cents per car	2.40		
Hay in Chicago yards	97.28		
Commission	390.46		
		648.14	
Total			4,541.88
Proceeds to shipper			49,136.29

SLAUGHTERING AND WHOLESALING.

31 steers, 37,530 pounds (Chicago weight), at $8			$3,002.40
Proceeds:			
Beef, 21,841 pounds,[2] as per following items			2,737.76
10 cattle, 6,596 pounds (Boston)		$840.19	
4 cattle, 2,706 pounds (Lynn, Mass.)		336.45	
4 cattle, 2,886 pounds (New York City)		358.63	
7 cattle, 5,103 pounds (Providence, R. I.)		633.91	
4 cattle, 2,856 pounds (Wilmington, Del.)		345.54	
2 cattle, 1,694 pounds (Dover, N. J.)		223.04	
31 cattle, 21,841.		2,737.76	
Hides,[3] 31 heavy Colorado hides, 2,579 pounds, at $15.67 per hundredweight			404.13
Oleo fat, 1,544 pounds, at $7.51 per hundredweight			115.95

Offal.	Weight.	Price.	Amount.	Per cent condemned.	Net amount.
		Cents.			
Livers	374 pounds	8½	$30.85	10	$27.77
Hearts	137 pounds	6¾	9.25	4	8.88
Tails	40 pounds	6	2.40	1	2.38
Sweet breads	8 pounds	18	1.44	1	1.43
Cheek meat	170 pounds	8¾	14.88	1	14.73
Ear glands	9 pounds	4	.36	1	.36
Head meat	29 pounds	8¾	2.54	1	2.52
Lips	35½ pounds	5	1.78	1	1.91
Brains	30 pounds	6	1.80	1	1.78
Tongues,[31] pieces,at 91 cents each					28.21
Casings	31 sets	50			15.50
Switches	31 pounds	3			.93
Tallow stock, such as pecks, reeds, windpipes, etc., worth 24 cents per M pounds alive					8.88
Tripe, tank value is 7 cents per M pounds alive					2.60
Blood, tank value is 11 cents per M pounds alive					4.07
Heads, tank value is 16 cents per M pounds alive					5.92
Feet, tank value is 16 cents per M pounds alive					5.92
					$133.79
Total proceeds to packer					3,391.63
Gross margin to packer					389.23

[1] This test on 31 steers out of the 66 shown in these two items.
[2] Recapitulation of branch house account sales.
[3] Basis for figuring hides:

Market price cured hides, per hundredweight	$19.50
Deduct for curing expense, per hundredweight	.51
Deduct for cuts, scores, and other defects	.53
Net value cured hides	18.97
Shrink, average 17.4 per cent	3.30
Equivalent price green hides	15.67

RETAIL ACCOUNT.

1. Dealer at Ipswich, Mass.				
Bought 1 side[1]	331	pounds, at 13 cents		$43.03
Sold: Round and flank	74.87	pounds	$16.03	
Rump	32.31	pounds	10.59	
Sirloin	39.25	pounds	11.08	
Rattle	84.13	pounds	15.74	
Back	65.75	pounds	15.93	
Trimmings	29.50	pounds	.26	
Total	325.81			69.63
Gross margin				26.60
Per cent gross margin, 61.81.				

SUMMARY OF STATEMENTS ON LOT 3.

(On basis of 1 animal.)

Shipment and marketing of live cattle:		
Returns per steer at Chicago, 1,211 pounds, at $8 per hundredweight		$96.88
Marketing expenses—		
Freight and terminal switching	$5.93	
Feed in transit	.23	
Yardage	.25	
Feed and insurance	.16	
Commission	.62	
		7.19
Proceeds to shipper		89.69
Slaughtering and wholesaling:		
Cost of live steer to packer		96.88
Proceeds—		
Beef, 705 pounds, average 12.53 cents	88.31	
Hide, 83 pounds, average 15.67 cents	13.04	
Oleo fat, 49.8 pounds, average 7.51 cents	3.74	
Offal, 4.32 cents	4.32	
		109.41
Gross margin to packer		12.53
Retailing:		
Cost of beef to retailer		88.31
Proceeds of beef		142.89
Gross margin to retailer		54.58

Lot No. 4.

Fourteen common Mexican steers (see Plate XX, fig. 2), from the same herd as lot No. 3 comprised lot No. 4. They came as stockers from the range of the late President Madero of Mexico, were shipped to the northern range as long 2-year-olds, and grazed until marketed.

The Mexicans were rounded up and shipped to Chicago in the same consignment as lot No. 3. They were not sold until September 10 and were slaughtered at one of the large packing houses September 11, 1914. With the exception of the ribs, loins, and rounds, which were sold to a jobber in Chicago and distributed by him to restaurants and commissary trade. the beef of lot No. 4 was used for sausage and canning meat.

ACCOUNT SALES ON LIVE CATTLE.

96	steers (Chicago weight),	123,590 pounds, at $8.15 per hundredweight	$10,072.58
113	steers (Chicago weight),	127,390 pounds, at $7.60 per hundredweight	9,681.64
104	steers (Chicago weight),	115,610 pounds, at $7.50 per hundredweight	8,670.75
85	steers (Chicago weight),	94,660 pounds, at $7.50 per hundredweight	7,099.50
35	steers (Chicago weight),	35,650 pounds, at $7.40 per hundredweight	2,638.10
13[2]	steers (Chicago weight),	12,090 pounds, at $6.85 per hundredweight	828.16
6	steers (Chicago weight),	6,630 pounds, at $7.15 per hundredweight	474.04
5	steers (Chicago weight),	5,680 pounds, at $7.00 per hundredweight	397.60
4	steers (Chicago weight),	3,780 pounds, at $6.00 per hundredweight	226.80
1	stag (Chicago weight)	1,000 pounds, at $6.50 per hundredweight	65.00
1	cow (Chicago weight),	1,180 pounds, at $6.85 per hundredweight	80.83
1	cow (Chicago weight),	1,050 pounds, at $6.85 per hundredweight	71.92
1	heifer (Chicago weight),	1,150 pounds, at $7.25 per hundredweight	83.37
1	stag (Chicago weight),	1,180 pounds, at $5.75 per hundredweight	67.85
1	steer (Chicago weight),	810 (retained).	
1	steer (Chicago weight),	890 (retained).	
468	cattle	532,340	$40,458.14

[1] This account is representative of two sides of same carcass bought by this dealer.
[2] Thirteen steers used in this test, together with one of same grade from another lot.

Freight from Malta, Mont., to Chicago:			
23 cars, 542,300 pounds, at 54 cents per hundredweight	$2,928.42		
Less freight on 17 strays	105.83		
Net freight charge	2,822.59		
Terminal charge, 18 cars, at $2	36.00		
		$2,858.59	
Feed in transit:			
New Rockford, N. Dak	79.20		
South St. Paul, Minn	91.80		
		171.00	
Yardage, at 25 cents per head		117.00	
Fire insurance, at 10 cents per car		2.30	
Hay in Chicago yards		126.74	
Commission		244.79	
			$3,520.42
Proceeds to shipper			36,937.72

SLAUGHTERING AND WHOLESALING.

14 steers, 13,150 pounds, at $6.85			$900.77
Proceeds.			
Beef, 7,243 pounds, as per following items,[1] $737.60—			
Ribs	680 pounds, at 10 cents	$68.00	
Loins	1,281 pounds, at 12 cents	153.72	
Shank meat	238 pounds, at 11½ cents	27.37	
Shank bones	220 pounds, at 1 cent	2.20	
Clods	340 pounds, at 12 cents	40.80	
Boneless chux	1,163 pounds, at 11¾ cents	136.66	
Chuck bones	276 pounds, at 1 cent	2.76	
Plate bones	171 pounds, at 1 cent	1.71	
Knobs	91 pounds, at 8 cents	7.28	
Buttocks (rounds)	1,867 pounds, at 10½ cents	196.04	
Neck end trimmings	469 pounds, at 11¾ cents	55.10	
Briskets	155 pounds, at 11¾ cents	18.22	
Flank trimmings	170 pounds, at 11¾ cents	19.98	
Steaks	32 pounds, at 11¾ cents	3.76	
Fat	52 pounds, at 6 cents	3.12	
Skin	28 pounds, at 1 cent	.28	
Brisket fat	10 pounds, at 6 cents	.60	
Total	7,243 pounds, at average of 10.18 cents		737.60
Hides:[2]			
13 Texas hides, 912 pounds, at 15.38 cents		140.25	
1 s. b. hide, 83 pounds, at 15.15 cents		12.58	
			152.83
Oleo fat,[3] 803 pounds, at 8.20 cents			65.84
Offal:			
14 sets casings, at 15 cents		2.10	
14 tongues, 63 pounds, at 9 cents		5.67	
14 livers, 126 pounds, at 8 cents		10.08	
14 hearts, 35 pounds, at 6½ cents		2.28	
14 ox tails, 14 pounds, at 5½ cents		.77	
14 tripe, at 7½ cents		1.05	
14 sets head and feet, blood and tankage to fertilizer, at 50 cents		7.00	
Tallow, 70 pounds, at 5 cents		3.50	
			32.45
Total proceeds to packer			988.72
Gross margin to packer			87.95

[1] Ribs, loins, and buttocks were sold to jobbers in Chicago. Remainder of carcasses was used for sausage and canned meat.

[2] Basis for figuring hides:

Green weight 13 Texas hides	pounds	977
Green weight 1 s. b. hide	do	88
Deduct 5 pounds per hide for water—		
13 Texas hides, less 65 pounds		912
1 s. b. hide, less 5 pounds		83
Estimated cured weights (18 per cent shrinkage)—		
13 Texas hides, 748 pounds, at 18¾ cents		$140.25
1 s. b. hide, 83 pounds, at 18¾ cents		$12.58
Green value based on value of cured hides—		
13 Texas hides, 912 pounds, value $140.25; value per pound	cents	$15.38
1 s. b. hide, 83 pounds, value $12.58; value per pound	do	$15.15

Caul and ruffle fat, wet, 303 pounds.
Deduct for moisture, 2 per cent, 6 pounds.
Shrunk weight, caul, and ruffle fat, 297 pounds.
Average ratio of caul and ruffle to total weight, oleo fats, 37 per cent.
Computed total weight oleo fats, 803 pounds.

JOBBERS' ACCOUNT.

1. Dealer, State Street, Chicago, Ill.[1]

Bought 28 rounds	1,867 pounds, at 10½ cents	$196.04	
28 loins	1,281 pounds, at 12 cents	153.72	
28 ribs	680 pounds, at 10 cents	68.00	
Total	3,828		$417.76
Sold 1,279	pounds loins, at 12½ cents	159.87	
592	pounds ribs, at 10½ cents	62.16	
22½	pounds ribs, at 11 cents	2.47	
19¾	pounds ribs, at 11 cents	2.17	
25½	pounds ribs, at 11 cents	2.80	
16¾	pounds ribs, at 11 cents	1.84	
1,867	pounds rounds, at 11 cents	205.37	
3,822½			436.68
Gross margin			18.92

Per cent gross margin, 4.53.

SUMMARY OF STATEMENTS ON LOT 4.

[On basis of one animal.]

Shipment and marketing of live cattle:		
Returns per steer at Chicago, 939 pounds, at $6.85 per hundredweight		$64.33
Marketing expenses—		
Freight and terminal switching	$6.11	
Yardage	.25	
Feed and insurance	.28	
Commission	.52	
		7.16
Proceeds to shipper		57.17
Slaughtering and wholesaling:		
Cost of live steer to packer		64.33
Proceeds:		
Beef cuts, 273 pounds, average 18 cents	29.84	
Sausage and canning meat, 244 pounds	22.85	
Total beef		52.69
Hide, 71.1 pounds, average 13.35 cents	10.91	
Oleo fat, 57.4 pounds, average 8.20 cents	4.71	
Offal	2.32	
		70.57
Gross margin to packer		6.24

JOBBER'S ACCOUNT.

Cost of beef to jobber	$29.84
Proceeds of beef	31.19
Gross margin to jobber	$1.35

Lot No. 5.

Lot No. 5 consisted of 100 good Pan Handle (Texas) steers, shipped as 2-year-olds in the spring of 1913 to Greenwood County, Kans., in the famous Flint Hills section and grazed during 1913 and 1914. Such cattle are termed "single wintered Texas-Kansans." When marketed the cattle of lot No. 5 were mostly 4-year-olds.

The steers were shipped from Sallyards, Kans., September 21, where they were sold on the same date and slaughtered September 22, 1914, by one of the large packing companies. The beef was distributed through branch houses in New York City, Brooklyn, Utica, Schenectady, and Syracuse, N. Y.; Jersey City, Newton, and Newark, N. J.; Cleveland and Akron, Ohio; St. Paul, Minn.; and one and one-half carcasses were sold in Kansas City. The bulk of this beef was sold to retail dealers for family trade.

ACCOUNT SALES ON LIVE CATTLE.

100 steers (Kansas City weight), 121,610 pounds, at $8.40		$10,215.24
Freight, Sallyards, Kan., to Kansas City, Mo.:		
117,500 pounds, at 13 cents	$152.75	
Yardage, at 25 cents per head	25.00	
Hay	6.00	
Commission, at 60 cents per head	60.00	
		243.75
Proceeds to shipper		9,971.49

[1] This beef handled by jobbers and sold to restaurant and commission trade in wholesale quantities.

SLAUGHTERING AND WHOLESALING.

100 steers, 121,610 pounds, at $8.40 ..... $10,215.24

Proceeds:

Beef, 69,079 pounds, as per following items [1]—

11	cattle,	8,703 pounds (Tenth Avenue, New York City)	$1,074.03	
6½	cattle,	4,865 pounds (Westchester, New York City)	595.97	
10	cattle,	6,851 pounds (Westchester, New York City)	877.18	
9	cattle,	5,452 pounds (Brooklyn)	675.31	
8	cattle,	5,034 pounds (Brooklyn)	638.64	
5	cattle,	3,292 pounds (Utica, N. Y.)	432.11	
5	cattle,	3,515 pounds (Schenectady, N. Y.)	450.69	
7	cattle,	4,838 pounds (Syracuse, N. Y.)	611.98	
10	cattle,	6,898 pounds (Jersey City, N. J.)	898.05	
5	cattle,	3,297 pounds (Trenton, N. J.)	443.93	
5	cattle,	3,519 pounds (Newark, N. J.)	433.27	
7	cattle,	4,864 pounds (Cleveland, Ohio)	621.23	
5	cattle,	3,256 pounds (Akron, Ohio)	400.53	
5	cattle,	3,729 pounds (St. Paul, Minn.)	445.65	
1	cattle,	590 pounds (to freezer)	59.00	
½	cattle,	376 pounds (cut up)	29.08	
100		69,079		8,686.65

Hides: [2]

12	butt brands,	No. 1, heavy....1,083 pounds, at 14 cents	151.62	
9	side brands,	No. 1, heavy.... 845 pounds, at 13½ cents	114.08	
69	Texas,	No. 1, heavy....5,700 pounds, at 15½ cents	869.25	
10	Texas,	No. 1, light..... 721 pounds, at 13½ cents	97.33	
100		8,349		1,232.28

Oleo fat, 4,856 pounds, at $7.79 per hundredweight [3] $378.28

Offal:

Livers, 86, 1,016 pounds, at 9½ cents	93.98	
Hearts, 100, 401 pounds, at 6¾ cents	27.07	
Tails, 100, 139 pounds, at 6 ¼ cents	8.51	
Tongues, [4] 100, 610 pounds, at 15½ cents	94.55	
Brains, 98, 68 pounds, at 6¼ cents	4.25	
Sweetbreads, No. 1, 17 pounds, at 16¾ cents	2.84	
Sweetbreads, No. 2, 10½ pounds, at 13¾ cents	1.44	
Switches, 100, 3 cents each	3.00	
Raw tripe, 1,411 pounds, at 1½ cents	21.16	
Cheek meat, 437 pounds, ar 9⅞ cents	43.16	
Head meat, 97 pounds, at 8⅞ cents	8.61	
Ox lips, 30 pounds, at 4½ cents	1.35	
Skull bones, 1,923 pounds, at $18 per ton	17.31	
Feet, 1,516 pounds, at $25 per ton	18.95	
Blood, dry, 770 pounds, at $40 per ton	15.40	
Tankage, dry, 734 pounds, at $20 per ton	7.34	
Tallow, 495 pounds, at 5¼ cents	25.99	
	394.91	
Less expense selling small offal, 3,093 pounds, at 75 cents per hundredweight	23.20	
Total, not including casings	371.71	

[1] Recapitulation of branch house account sales.

[2] Basis for figuring hides: Yield, 80 per cent; expenses, 90 cents per cwt.; No. 2 (cut hides) 2 per cent. Cured market value per pound as follows: Butt brands 18¾ cents; side brands, 18¼ cents; heavy Texas, 20¼ cents; light Texas, 18¼ cents.

[3] Basis for figuring oleo fats:

No. 1 oleo oil, 67 per cent, 13⅞ cents	$8.79
No. 1 stearine, 33 per cent, 11½ cents	3.80
Market price No. 1, stock	12.59
Less expense	1.25
Green value No. 1 stock	11.34

Yield.

	Per cent.	Price.	Amount.
No. 1 stock	51.75	$11.34	$5.87
No. 2 stock	16.00	11.00	1.76
No. 3 stock	1.25	7¾	.10
Tallow	1.25	6¼	.06
Value, per cent, oleo fats			7.79

[4] Gross weight, 878 pounds; yield, 69½ per cent, 610 pounds.

Proceeds—Continued.		
Casings:		
Round export, No. 1, 44⅛ sets, at 25 cents	$11.03	
Round export, No. 2, 12 sets, at 21 cents	2.52	
Domestic, 40 sets, at 18½ cents	7.40	
Stumps, 1 set, at 8½ cents	.09	
Middles, regular, 38½ sets, at 70 cents	26.95	
Middles, stump, 1½ sets, at 27½ cents	.41	
Bungs, 100 pieces, at 21½ cents	21.50	
Bladders, 94 pieces, at 3½ cents	3.29	
Wesands, 66 pieces, at 5 cents	3.30	
	76.49	
Less expense, 35 cents per set	35.00	
Value of casings	41.49	
Total value offal		$413.20
Total proceeds to packer		10,710.41
Gross margin to packer		495.17

RETAIL ACCOUNTS.

1. Dealer at Schenectady, N. Y.

Bought one side, 309 pounds, at 14½ cents		$44.81
Sold:		
Fore quarter—		
8 pounds shank beef, at 12½ cents	$1.00	
2 pounds bone, at ½ cent	.01	
2 pounds hamburg steak, at 16 cents	.32	
2 pounds arm piece of beef, at 16 cents	.32	
27 pounds rib of beef, at 22 cents	5.94	
37 pounds plate beef, at 12½ cents	4.63	
1 pound hamburg steak, at 16 cents	.16	
2 pounds bone, at ½ cent	.01	
20 pounds Boston cut of beef, at 20 cents	4.00	
38 pounds shoulder beef, at 20 cents	7.60	
12 pounds neck beef, at 12 cents	1.44	
7 pounds arm piece of beef, at 16 cents	1.12	
2 pounds fat beef, at 3 cents	.06	
2 pounds bone, at ½ cent	.01	
Hind quarter—		
6½ pounds flank, at 16 cents	1.04	
1½ pounds steak, at 22 cents	.33	
6½ pounds cod fat, at 3 cents	.19	
14½ pounds sirloin butt, at 20 cents	2.90	
1 pound skirt steak, at 16 cents	.16	
11 pounds kidney suet, at 5 cents	.55	
1 pound beef kidney, at 10 cents	.10	
2 pounds bone, at ½ cent	.01	
11 pounds rump beef, at 16 cents	1.76	
7 pounds sirloin steak, at 24 cents	1.68	
10 pounds flat bone steak, at 25 cents	2.50	
6½ pounds hip sirloin steak, at 18 cents	1.17	
8½ pounds best porterhouse steak, at 28 cents	2.38	
8½ pounds small porterhouse steak, at 24 cents	2.04	
3½ pounds scraps, at 3 cents	.10	
11½ pounds top round steak, at 25 cents	2.88	
7 pounds bottom round steak, at 24 cents	1.68	
13½ pounds round steak, at 22 cents	2.97	
6½ pounds pot roast, at 16 cents	1.04	
6 pounds soup bone, at 12½ cents	.75	
3½ pounds bone, at ½ cent	.02	
309		52.87
Gross margin		8.06

Per cent gross margin, 17.98.

2. Dealer at Utica, N. Y.

Bought one carcass, 593 pounds, at 13 cents		77.09
Sold:		
25½ pounds sirloin, at 28 cents	7.14	
29½ pounds porterhouse, at 28 cents	8.26	
49 pounds round steak, at 24 cents	11.76	
17½ pounds rump, at 18 cents	3.15	
16 pounds heel, at 18 cents	2.88	
3⅛ pounds outside flank (stew), at 16 cents	.50	
16 pounds corned beef, at 14 cents	2.24	
39 pounds first cut, at 18 cents	7.02	
10 pounds second cut, at 22 cents	2.20	
53 pounds chuck rib roasts, at 18 cents	9.54	
43 pounds chuck steaks, at 20 cents	8.60	
40 pounds plate beef, at 12 cents	4.80	
16 pounds shoulder clod, at 20 cents	3.20	
33¾ pounds shoulder meat and neck, at 16 cents	5.40	
Soup bone knuckles	.95	
68 pounds hamburger, shin meat, at 16 cents	10.88	
Kidneys	.19	
25 pounds suet, at 4½ cents	1.13	
39½ pounds shop fat, at 2½ cents	1.00	
40 pounds bones, at ½ cent	.20	
563⅞ pounds, total		91.04
Gross margin		13.95

Per cent gross margin, 18.09.

3. Dealer at Utica, N. Y.

Bought one side, 344 pounds, at 13 cents		$44.72
Sold:		
31 pounds rack, at 18 cents	$5.58	
40 pounds plate, at 10 cents	4.00	
11 pounds fore shank, at 6 cents	.66	
97 pounds chuck, at 15 cents	14.55	
11 pounds flank, at 7 cents	.77	
22 pounds cod and kidney, at 6 cents	1.32	
26 pounds porterhouse steak, at 30 cents	7.80	
25 pounds sirloin, at 24 cents	6.00	
40 pounds round steak, at 26 cents	10.40	
18 pounds hind shank, at 6 cents	1.08	
13 pounds rump, at 16 cents	2.08	
3½ pounds soup bone	.15	
3¾ pounds rump trimmings	.06	
340¾ pounds, total		54.45
Gross margin		9.73

Per cent gross margin, 21.75.

4. Dealer on East One hundred and twentieth Street, New York City.

Bought 1 side, 362 pounds, at 12½ cents		45.25
Sold:		
16 pounds top sirloin, at 16 cents	2.56	
23 pounds hip sirloin, at 23 cents	5.29	
29 pounds short loin, at 24 cents	6.96	
5 pounds sirloin steaks (2), at 19 cents	.95	
2 pounds drop tenderloin, at 16 cents	.32	
3½ pounds suet, at 9 cents	.31	
5 pounds trimmings, at 13 cents	.65	
1 pound fat, at 3 cents	.03	
17 pounds top round, at 22 cents	3.74	
16 pounds bottom round, at 22 cents	3.52	
19 pounds rump, at 16 cents	3.04	
1 pound trimming, at 6 cents	.06	
10 pounds leg, at 8 cents	.80	
5 pounds bone, at 2 cents	.10	
8½ pounds ribs (second, third, fourth), at 22 cents	1.87	
9 pounds ribs (fifth, sixth), at 20 cents	1.80	
11 pounds ribs (seventh, eighth), at 18 cents	1.98	
8½ pounds ribs (ninth), at 16 cents	1.36	
4½ pounds flank outside, at 12 cents	.54	
3 pounds flank steak, at 16 cents	.48	
7¾ pounds cod fat, at 6 cents	.46	
19 chuck steaks (6), at 17 cents	3.23	
38½ pounds neck of beef, at 16 cents	6.16	
26½ pounds, brisket, at 12 cents	3.18	
35 pounds plate and navel, at 10 cents	3.50	
13 pounds cross rib, at 19 cents	2.47	
6 pounds shoulder meat, at 16 cents	.96	
7½ pounds shin, at 8 cents	.60	
5 pounds shin bone, at 2 cents	.10	
354¾ pounds, total		57.02
Gross margin		11.77

Per cent gross margin, 26.01.

5. Dealer at Brooklyn, N. Y.

Bought 1 carcass, 578 pounds, at 13½ cents		78.03
Sold:		
24 pounds top sirloin, at 19 cents	4.56	
32 pounds brisket, at 10 cents	3.20	
4½ pounds flank steak, at 18 cents	.81	
9 pounds flank steak, at 14 cents	1.26	
1¾ pounds hanger, at 18 cents	.32	
2½ pounds skirt steak, at 16 cents	.40	
48 pounds fresh plate, at 10 cents	4.80	
2 pounds kidney, at 16 cents	.32	
22 pounds X rib, at 19 cents	4.18	
42 pounds chuck and skirt steak meat, at 17 cents	7.14	
16 pounds shin beef, at 14 cents	2.24	
9½ pounds fresh cut round, at 18 cents	1.71	
48 pounds neck, shoulder, and steak bones (given away)	.00	
23½ pounds suet (given away)	.00	
19 pounds rump beef, at 18 cents	3.42	
15½ pounds bottom round, at 24 cents	3.72	
34½ pounds round steak, at 26 cents	8.97	
3½ pounds chop meat, at 14 cents	.49	
56 pounds prime rib, at 18 cents	10.08	
18 pounds chuck roast, at 16 cents	2.88	
33½ pounds chuck steak, at 17 cents	5.69	
34 pounds porterhouse steak, at 27 cents	9.18	
43 pounds sirloin steak, at 26 cents	11.18	
28 pounds shop fat, at 2¾ cents	.77	
9 pounds flank, at 0 cents	.00	
578¾ pounds, total		87.32
Gross margin		9.29

Per cent gross margin, 11.91.

6. Dealer at Brooklyn, N. Y.

Bought 1 carcass, 621 pounds, at 12½ cents		$77.63
Sold:		
41 pounds brisket, at 10 cents	$4.10	
63 pounds plate, at 10 cents	6.30	
103 pounds chuck beef, at 16 cents	16.48	
18 pounds rib end, at 18 cents	3.24	
50 pounds short rib, at 20 cents	10.00	
19 pounds top sirloin, at 20 cents	3.80	
1 pound beef tenderloin, at 20 cents	.20	
39 pounds porterhouse, at 22 cents	8.58	
53 pounds sirloin, at 22 cents	11.66	
6 pounds flank steak, at 20 cents	1.20	
60 pounds top round, at 22 cents	13.20	
30 pounds bottom round, at 22 cents	6.60	
20 pounds round corned beef, at 16 cents	3.20	
9 pounds soup meat, at 16 cents	1.44	
38 pounds shin beef, at 16 cents	6.08	
2 pounds beef kidneys, ar 12½ cents	.25	
19 pounds suet, at 6½ cents	1.24	
22 pounds waste, at 3 cents	.66	
24 pounds bones, at 1 cent	.24	
617 pounds, total		98.47
Gross margin		20.84

Per cent gross margin, 26.85.

7. Dealer at Newark, N. J.

Bought 1 carcass, 673 pounds, at 12 cents		80.76
Sold:		
24 pounds top sirloin, at 20 cents	4.80	
46 pounds hip, at 22 cents	10.12	
40 pounds short loins, at 25 cents	10.00	
50 pounds suet and trimmings, at 4 cents	2.00	
34 pounds flank with fat	1.00	
35 pounds shin with bone	2.00	
97 pounds round rump and hosreshoe, at 20 cents	19.40	
76 pounds ribs, at 19 cents	14.44	
76 pounds plate, at 10 cents	7.60	
20 pounds shoulder meat, at 16 cents	3.20	
18 pounds shin bone and trimming	.75	
32 pounds cross rib, at 20 cents	6.40	
95 pounds blank chuck, at 15 cents	14.25	
30 pounds brisket, at 10 cents	3.00	
673 pounds beef (total)		98.96
Gross margin		18.20

Per cent gross margin, 22.53.

SUMMARY OF STATEMENT ON LOT 5.

[On basis of one animal.]

Shipment and marketing of live cattle:		
Returns per steer at Kansas City, 1,216 pounds, at $8.40		$102.14
Marketing expenses—		
Freight and terminal switching	$1.53	
Yardage	.25	
Feed and insurance	.06	
Commission	.60	
		2.43
Proceeds to shipper		99.71
Slaughtering and wholesaling:		
Cost of live steer to packer		102.14
Proceeds—		
Dressed beef, 691 pounds, average 12.57 cents	86.86	
Hide, 83.5 pounds, average 14.75 cents	12.32	
Oleo fat, 48.6 pounds, average 7.79 cents	3.79	
Offal	4.13	
		107.10
Gross margin to packer		4.96
Retailing:		
Cost of beef to retailer		86.86
Proceeds of beef [1]		106.17
Gross margin to retailer		19.31

[1] Based on average per cent gross margin.

Lot No. 6.

In lot No. 6 were 23 good native 2-year-old grass steers which were fattened on pasture near Markham, Va. In the spring of 1914 these cattle had been brought to Fauquier County from Nokesville, Va., as 2-year-old feeders, weighing 650 to 700 pounds per head. They were fed on pasture with a ration of corn and cottonseed meal during the summer.

The steers were shipped from Markham, Va., September 26, arriving at Baltimore on September 27, where they were sold on September 28, 1914, to a local butcher. They were held until October 4, when they were slaughtered. The beef was retailed through two meat markets in Baltimore.

ACCOUNT SALES ON LIVE CATTLE

23 steers, 23,925 pounds (Baltimore weight), at $7.50		$1,794.37
Freight, Markham, Va., to Baltimore, Md., 23,925 pounds, at 6.8 cents per hundredweight.	$16.27	
Yardage, at 25 cents per head	5.75	
Feed and insurance	7.36	
Commission	23.00	
		52.38
Proceeds to shipper		1,751.99

SLAUGHTERING AND WHOLESALING.

23 steers, 23,925 pounds, at $7.50		$1,794.37
Feed while holding for slaughter		2.00
		1,796.37
Proceeds:		
Beef, 12,314 pounds, at $12.10		1,489.99
Hides, 1,675 pounds, at 13½ cents		226.13
Fats—		
Caul and ruffle, 842 pounds, at 5 cents	$42.10	
Gut, pluck, and other rough fats, 30 pounds, at 3 cents	.90	
		43.00
Offal—		
Cheek meat, 115 pounds, at 8 cents	9.20	
Tongues, 23, at 60 cents	13.80	
Tails, 23, at 2½ cents	.58	
Feet, 92, at 4 cents	3.68	
Livers, 230 pounds, at 11 cents	25.30	
Sweetbreads, 46, at 5 cents	2.30	
Tripe, 184 pounds, at 6 cents	11.04	
Casings—		
Rounds, 1,725 feet, at ⅛ cent	3.45	
Middles, 391 feet, at 1 cent	3.91	
Bladders, 23, at 4 cents	.92	
		74.18
Total proceeds to packer		1,833.30
Gross margin to packer		36.93

RETAIL ACCOUNTS.

1. Hollins Market, Baltimore, Md.
Bought 1 side, 266 pounds, at 12.10 cents $32.19
Sold 260.5 pounds, as per following items:

Cuts.	Pounds.	Average price.	Total.
		Cents.	
Rib	31	17	$5.27
Chuck	24	14	3.36
Plate	29	10	2.90
Shoulder	20	9	1.80
Three corner	15½	14	2.17
Neck	10	9	.90
Brisket	13½	10	1.35
Round	40	18	7.20
Butt	26	20	5.20
Thin end	26½	22	5.83
Rump	9	13	1.17
Shin	10	6	.60
Flank	5	10	.50
Kidney	1	15	.15
			38.40

Total, 260½ pounds.
Gross margin 6.21
Per cent gross margin, 19.29.

2. Dealer, Lexington Market, Baltimore, Md.
Bought 1 side, 277 pounds, at 12.10 cents $33.52
Sold 273 pounds, as per following items:

Cuts.	Pounds.	Average price.	Total.	
		Cents.		
Chuck	55	14	$7.70	
Brisket	23	10	2.30	
Plate	15	10	1.50	
Shoulder	20	10	2.00	
Rib	32	18	5.76	
Round	48	18	8.64	
Rump	12	13	1.56	
Flank	6	11¾	.70	
Shin	10	10	1.00	
Loin	52	18	9.36	
				40.52

Total, 273 pounds.
Gross margin 7.00
Per cent gross margin, 20.88.

SUMMARY OF STATEMENTS ON LOT 6.

[On basis of 1 animal.]

Shipment and marketing of live cattle:		
Returns per steer at Baltimore, 1,040 pounds, at $7.50 per hundredweight		$78.00
Marketing expenses—		
Freight	$0.71	
Yardage	.25	
Feed and insurance	.32	
Commission	1.00	
		2.58
Proceeds to producer		75.62
Slaughtering and wholesaling:		
Cost of live steer to packer		78.00
Proceeds—		
Beef, 535.4 pounds, at 12.10 cents	64.78	
Hide, 73 pounds, at 13.50 cents	9.85	
Oleo fat, 37.9 pounds, average 4.9 cents	1.86	
Offal	3.23	
		79.72
Gross margin to packer		1.72
Retailing:		
Cost of beef to retailer		64.78
Proceeds of beef		77.69
Gross margin to retailer		12.91

Lot No. 7.

Twenty-four good, 3-year-old Oregon grass steers comprised lot No. 7. These steers had been produced under range conditions near Baker City, Oreg., having been run on the Whitman National Forest in summer and fed hay in the valleys in winter.

They were trailed 50 miles to the railroad shipping station at Baker City, loaded on October 10, and arrive at the stockyards at North Portland, Oreg., October 11, 1914. They were sold October 12 and slaughtered October 14, 1914, at a large packing house near the stockyards. The beef was distributed through branch houses at Portland, Oreg.; Spokane, Tacoma, and Seattle, Wash.; and was sold principally through retail markets. One part of the lot was sold to the commissary department of one of the trunk railroad lines for dining-car service.

ACCOUNT SALES ON LIVE CATTLE.

24 steers (Portland weight), 31,110 pounds, at $7.15		$2,224.37
Freight, Baker, Oreg., to Portland, carload rate	$60.00	
Yardage, at 25 cents per head	6.00	
Fire insurance	.10	
Alfalfa hay in pens at Portland, 2 days	13.54	
Commission, at 60 cents per head	14.40	
		94.04
Proceeds to shipper		2,130.33

SLAUGHTERING AND WHOLESALING.

24 steers, 31,110 pounds, at $7.15		$2,224.37
Proceeds:		
Beef, 17,262 pounds, as per following items [1]—		
5 cattle, 3,580 pounds (Tacoma)	$411.81	
6 cattle, 3,748 pounds (Portland)	431.00	
4 cattle, 2,667 pounds (Spokane)	299.59	
9 cattle, 7,267 pounds (Seattle)	872.04	
24 cattle, 17,262 pounds		2,014.46
Hides, 1,963 pounds, at 14.55 cents [2]		285.08
Oleo fats, 1,475 pounds, at 4.04 cents [3]		59.59
Offal—		
Edible offal [4]	48.62	
Fertilizer [5]	7.81	
Casings, average 35.5 cents per head	8.52	
		64.95
Total proceeds to packer		2,424.08
Gross margin to packer		199.71

RETAIL ACCOUNTS.

1. Dealer at Portland, Oreg.		
Bought 1 carcass,[6] 720 pounds, at 11.5 cents		$82.80
Sold: [7]		
179 pounds round, at 18.5 cents	$33.12	
72 pounds rib, at 16.5 cents	11.88	
129 pounds loin, at 23.5 cents	30.32	
36 pounds flank, at 10 cents	3.60	
301 pounds chuck, at 13.5 cents	40.63	
717 pounds (total)		119.55
Gross margin		36.75
Per cent gross margin, 44.38.		
2. Dealer at Seattle, Wash.		
Bought wholesale cuts, as follows:		
3 chucks and plates, 506 pounds, at 9½ cents		48.07
1 flank 18 pounds, at 6 cents		1.08
1 round 95 pounds, at 13 cents		12.35
Total 619 pounds		61.50
Sold: [7]		
172 pounds chuck and plate	21.16	
163½ pounds chuck and plate	19.96	
169½ pounds chuck and plate	20.72	
16 pounds flank	2.09	
95 pounds round	14.14	
615½ pounds (total)		78.07
Gross margin		16.57
Per cent gross margin, 26.94.		

SUMMARY OF PROCEEDS ON LOT 7.

[On basis of 1 animal.]

Shipment and marketing of live cattle:		
Returns per steer at Portland, 1,296 pounds, at $7.15		$92.67
Marketing expenses—		
Freight and terminal switching	$2.50	
Yardage	.25	
Feed and insurance	.06	
Commission	.60	
		3.41
Proceeds to producer		89.26
Slaughtering and wholesaling:		
Cost of live steer to packer		92.67
Proceeds—		
Beef, 719.2 pounds, average 11.7 cents	84.15	
Hide, 81.8 pounds, at 11.55 cents	11.90	
Oleo fats, 61.5 pounds, at 4.04 cents	2.48	
Offal	2.72	
		101.25
		8.58
Retailing:		
Cost of beef to retailer		84.15
Proceeds of beef		114.16
Gross margin to retailer		30.01

[1] Recapitulation of branch houses account sales.
[2] Based on 17.5 cents for cured hides, shrinkage 17 per cent.
[3] Based on 4.25 cents at net weight, shrinkage 5 per cent.
[4] Basis, 28 cents per hundredweight on shrunk beef weight (17,362 pounds).
[5] Basis, 4.5 per hundredweight on shrunk beef weight (17,362 pounds).
[6] This account is representative of 4 cattle of same grade and price bought by this dealer.
[7] Summary of itemized accounts on retail cuts.

Lot No. 8.

Lot No. 8 consisted of 28 common 3-year-old southern grass steers which were raised in Alabama and, as is the custom in that section, were fed no grain with the exception of 1 pound of cottonseed cake per day during a few weeks of the first winter.

The cattle were loaded at Porterville, Miss., October 27, arrived at the National Stock Yards, East St. Louis, Ill., October 28, were sold the same day, and slaughtered at one of the large packing houses near the stockyards October 29, 1914.

ACCOUNT SALES ON LIVE CATTLE.

28 steers,[1] 20,120 pounds (National Stock Yards, Ill., weight), at $5.65		$1,136.78
5 oxen, 4,540 pounds (National Stock Yards, Ill., weight), at $5.15		233.81
		1,370.59
Freight on 33 cattle, Porterville, Miss., to National Stock Yards, Ill. (minimum car rate)	$67.00	
Yardage, at 25 cents per head (maximum carload rate)	8.00	
Fire insurance at 10 cents per car	.10	
Hay, 3 bales, at 85 cents	2.55	
Commission (maximum carload single-deck charge)	15.00	
		92.65
Proceeds to shipper		1,277.94

SLAUGHTERING AND WHOLESALING.

28 steers, 20,120 pounds (National Stock Yards, Ill., weight), at $5.65			$1,136.78
Beef,[2] 9,866 pounds, as per following items—			
Baltimore, Md.	6 carcasses, 2,324 pounds	$238.59	
Fort Wayne, Ind	5 carcasses, 1,743 pounds	172.75	
Detroit, Mich.	5 carcasses, 1,689 pounds	153.69	
Wheeling, W. Va.	5 carcasses, 1,664 pounds	126.14	
Indianapolis, Ind.	7 carcasses, 2,446 pounds	214.18	
Total	28 carcasses, 9,866 pounds		905.35
Hides, 28 extra light Texas, 1,381 pounds, at $14.45 per hundredweight			199.55
Oleo fats, 749 pounds, at $5.85 per hundredweight			43.82
Offal, as per following items			84.08

	Pieces.	Cold weight.	Price.	Amount.
		Pounds.	*Cents.*	
Livers	22	186	8½	$15.81
Hearts	28	68	6½	4.42
Ox tails	28	27	6	1.62
Tongues	28	171	47	13.16
Brains		23½	6	1.41
Sweetbreads		6¼	22	1.38
Cheek meat		102	9⅞	10.07
Head meat		21	9⅞	2.07
Ox lips		20	4¾	.95
Ox palate		2½	4	.10
Ear glands		3¼	4	.13
Weasand meat		11	9⅞	1.09
Pituitary glands		¼		
Heart sweetbreads		3½	4	.14
Casings			50	14.00
Switches			3	.84
Tallow, 30 cents per 1,000 pounds alive				6.03
Heads, 26 cents per 1,000 pounds alive				5.23
Feet, 18 cents per 1,000 pounds alive				3.62
Blood, 10 cents per 1,000 pounds alive				2.01
Total proceeds to packer				1,232.80
Gross margin to packer				96.02

[1] 28 steers comprised in following statement.
[2] Recapitulation of branch house account sales.

1. Dealer at Indianapolis, Ind.

Bought 1 side of beef, 170 pounds, at 10½ per pound			$17.85
Sold:			
4	pounds sirloin, at 20 cents	$0.80	
5	pounds top sirloin, at 20 cents	1.00	
13	pounds porterhouse, at 25 cents	3.25	
25	pounds round steaks, at 20 cents	5.00	
8	pounds rump, at 12½ cents	1.00	
5	pounds heel, at 12½ cents	.63	
4	shank soup bones	.20	
4	pounds neck of beef, at 12½ cents	.50	
11	pounds plate cuts (brisket), at 12 cents	1.32	
11¼	pounds plate piece, at 12 cents	1.35	
15¾	pounds shoulder clod, at 17c	2.68	
1	pound kidneys, at 5 cents	.05	
8	pounds suet, at 5c	.40	
4	pounds cod fat, at 5 cents	.20	
17	pounds ribs, at 15 cents	2.55	
32	pounds chucks, at 15 cents	4.80	
168	pounds (total)		25.73
	Gross margin		7.88

Per cent gross margin, 44.15.

2. Dealer at Indianapolis, Ind.

Bought 1 carcass, beef, 324 pounds, at 8¼ cents per pound			26.73
Sold:			
47	pounds sirloin, at 15 cents	7.05	
47	pounds round cuts, at 15 cents	7.05	
18	pounds rump, at 10 cents	1.80	
8	pounds heel, at 12½ cents	1.00	
16	pounds shank soup bones, at 7 cents	1.12	
8½	pounds flank cuts, at 12½ cents	1.06	
31½	pounds rib cuts, at 12½ cents	3.91	
91½	pounds chuck cuts, at 12½ cents	11.41	
17	pounds brisket, at 10 cents	1.70	
17½	pounds plate piece, at 10 cents	1.75	
7	pounds shin soup bones, at 6½ cents	.46	
4	pounds trimmings and bones, at ½ cent	.02	
7	pounds suet and cod fat, at 4½ cents	.32	
319½	pounds		38.65
	Gross margin		11.92

Per cent gross margin, 44.59.

3. Dealer at Fort Wayne, Ind.

Bought 1 side of beef, 187 pounds, at 10 cents per pound			18.70
Sold:			
18½	pounds sirloin, at 22 cents	4.07	
7	pounds porterhouse, at 23 cents	1.61	
19	pounds round steaks, at 20 cents	3.80	
8	pounds rump, at 12½ cents	1.00	
8	pounds heel, at 15 cents	1.20	
10	pounds shank soup bones, at 3 cents	.30	
3	pounds rump bone, at 3 cents	.10	
4½	pounds flank steak, at 12½ cents	.57	
5	pounds outside flank (stew), at 6 cents	.30	
13½	pounds rib cuts, at 15 cents	2.03	
57	pounds chuck cuts, rib roast, at 14 cents	7.98	
20	pounds plate cuts, at 12 cents	2.40	
8	pounds shin soup bones, at 3¾ cents	.30	
¾	pounds kidneys	.05	
2½	pounds suet, at 3½ cents	.09	
184¾	pounds		25.80
	Gross margin		7.10

Per cent gross margin, 37.97.

4. Dealer at Detroit, Mich.

Bought 1[1] carcass of beef, 343 pounds, at 9 cents per pound			30.87
Sold:			
29½	pounds sirloin, at 17 cents	5.02	
21	pounds porterhouse, at 18 cents	3.78	
41	pounds round steaks, at 16 cents	6.56	
20½	pounds rump, at 10 cents	2.05	
11½	pounds heel, at 12 cents	1.38	
12½	pounds shank soup bones, at 5 cents	.63	
4	pounds outside flank (stew), at 10 cents	.40	
32	pounds chuck rib roasts, at 13 cents	4.16	
96	pounds pot roasts, at 12 cents	11.52	
8½	pounds neck of beef, at 9 cents	.76	
31	pounds plate piece, at 9 cents	2.78	
11½	pounds shoulder clod, at 11 cents	1.26	
5	pounds kidneys, at 7 cents	.35	
10	pounds bones	.00	
5	pounds trimmings	.00	
338½	pounds		40.65
	Gross margin		9.78

Per cent gross margin, 31.68.

[1] This dealer bought 4 of the 5 carcasses shipped to Detroit and this data may be considered representative.

5. Dealer at Indianapolis, Ind.

Bought 1 side of beef, 196 pounds, at 9½ cents per pound		$18.62
Sold:		
18¼ pounds sirloin, at 17 cents	$3.10	
13½ pounds porterhouse, at 18 cents	2.43	
28 pounds round steaks, at 17 cents	4.76	
5¾ pounds rump, at 12½ cents	.72	
6 pounds heel, at 14 cents	.84	
12¾ pounds shank soup bones, at 3 cents	.38	
1¼ pounds flank steak, at 18 cents	.22	
4¼ pounds corned beef, at 12½ cents	.53	
20 pounds rib cut, at 12 cents	2.40	
26½ pounds chuck cuts, at 13 cents	3.41	
10½ pounds cross ribs, at 11 cents	1.13	
21½ pounds plate cuts, at 10½ cents	2.26	
12 pounds shin and shoulder cuts, at 14 cents	1.68	
2½ pounds drop tenderloin, at 12 cents	.30	
¾ pounds kidneys, at 7 cents	.05	
4½ pounds cod fat, at 6 cents	.25	
7¼ pounds bones, at 1 cent	.07	
194½ pounds		24.53
Gross margin		5.91

Per cent gross margin, 31.74.

SUMMARY OF STATEMENTS ON LOT 8.

[On basis of 1 animal.]

Shipment and marketing of live stock:		
Returns per steer at National Stock Yards, Ill., 719 pounds, at $5.65		$40.62
Marketing expenses—		
Freight	$2.03	
Yardage	.24	
Feed and insurance	.08	
Commission	.45	
		2.80
Proceeds to producer		37.82
Slaughtering and wholesaling:		
Cost of live steer to packer		40.62
Proceeds:		
Beef, 352.4 pounds, average 9.17 cents	32.32	
Hide, 49.3 pounds, average 14.45 cents	7.12	
Oleo fat, 26.8 pounds, average 5.85 cents	1.57	
Offal	3.00	
		44.01
Gross margin to packer		3.39
Retailing:		
Cost of beef to retailer		32.32
Proceeds of beef [1]		44.61
Gross margin to retailer		12.29

Lot No. 9.

In lot No. 9 were 27 medium Texas steers which were fed at Saginaw, Tex., about 8 miles from the Fort Worth Union Stock Yards. They were bought as feeders at the Fort Worth market about four months previously and driven to the feed lot. The cattle were fed cottonseed cake on grass for 120 days.

They were shipped from Saginaw, Tex., to the stockyards at Fort Worth on November 2, 1914, were sold and slaughtered the same day. The beef was distributed through branch houses in Beaumont, Dallas, and San Antonio, Tex.; New Orleans, La.; Memphis, and Chattanooga, Tenn.; Atlanta and Savannah, Ga.; Norfolk and Richmond, Va.; Louisville, Ky.; and Scranton, Pa. Two carcasses were disposed of at Fort Worth. The beef was sold principally through retail markets.

ACCOUNT SALES ON LIVE CATTLE.

27 steers, 28,640 pounds (Fort Worth weight), at $6.65		$1,904.56
Freight, Saginaw to Fort Worth, Tex	$22.95	
Yardage, at 25 cents per head	6.75	
Feed and insurance	1.38	
Commission	13.50	
		44.58
Net proceeds to shipper		1,859.98

[1] Based on average per cent gross margin.

SLAUGHTERING AND WHOLESALING.

27 steers, 28,640 pounds, at 6.65		$1,904.56
Proceeds:		
Beef,[1] 15,285 pounds, as per following items—		
2 cattle, 1,106 pounds (Atlanta, Ga.)	$116.37	
2 cattle, 1,005 pounds (Beaumont, Tex.)	106.58	
4 cattle, 2,327 pounds (Chattanooga, Tenn.)	246.77	
1 cattle, 597 pounds (Dallas, Tex.)	53.34	
1 cattle, 610 pounds (New Orleans, La)	67.00	
2 cattle, 1,238 pounds (Norfolk, Va.)	151.43	
3 cattle, 1,909 pounds (Richmond, Va.)	225.35	
3 cattle, 1,688 pounds (Louisville, Ky.)	171.85	
2 cattle, 946 pounds (Memphis, Tenn.)	95.40	
2 cattle, 1,217 pounds (San Antonio, Tex.)	126.04	
2 cattle, 1,073 pounds (Savannah, Ga.)	96.57	
1 cattle, 535 pounds (Scranton, Pa.)	61.53	
2 cattle, 1,024 pounds (Fort Worth, Tex.)	87.04	
27 cattle, 15,285 pounds	1,605.27	
Hides—		
16 Texas steer hides, 1,258 pounds, at $15.30	192.47	
11 light Texas steer hides, 736 pounds, at $14.65	107.82	
		300.29
Fats, Oleo fat, 1,096 pounds, at 6.29 cents per pound	68.94	
		153.79
Offal—		
Livers, 107 pounds, at 8½ cents	9.09	
Hearts, 91 pounds, at 5⅝ cents	5.12	
Tails, 28 pounds, at 7½ cents	2.10	
Tongues, 25 pieces, at 59 cents each	14.75	
Brains, 24 pounds, at 6 cents	1.44	
Sweetbreads, 10 pounds, at 22 cents	2.20	
Cheek meat, 96 pounds, at 9⅞ cents	9.48	
Head meat, 32 pounds, at 9⅞ cents	3.16	
Ox lips, 19 pounds, at 5 cents	.95	
Palates, 5 pounds, at 4 cents	.20	
Casings, 50 cents per head	13.50	
Switches, 3 cents per head	.81	
Tallow stock, 28 cents per 1,000 alive	8.02	
Heads, 20 cents per 1,000 alive	5.73	
Feet, 19 cents per 1,000 alive	5.44	
Blood, 10 cents per 1,000 alive	2.86	
Total value of offal		84.85
Total proceeds to packer		2,144.20
Gross margin to packer		239.64

RETAIL ACCOUNTS.

1. Dealer, Main Street, Memphis, Tenn.

Bought 1 carcass, 470 pounds, at 10½ cents		$49.35
Sold:		
11½ pounds sirloin, at 25 cents	$2.81	
8 pounds top sirloin, at 17½ cents	1.40	
22½ pounds porterhouse, at 30 cents	6.75	
5 pounds club steak, at 32½ cents	1.63	
3½ pounds T-bone steak, at 25 cents	.88	
22 pounds tenderloin steak, at 25 cents	5.50	
48 pounds round steak, at 20 cents	9.60	
36 pounds rump, at 14 cents	5.04	
8 pounds heel, at 15 cents	1.20	
30 pounds shank soup bones, at 3 cents	.90	
2½ pounds flank steak, at 22½ cents	.56	
9 pounds outside flank (stew), at 10 cents	.90	
28 pounds rib cut, at 25 cents	7.00	
8 pounds rib cut, third, at 20 cents	1.60	
6 pounds rib ends, at 12½ cents	.75	
30 pounds chuck rib roast, at 12½ cents	3.75	
30 pounds chuck steaks, at 15 cents	4.50	
20 pounds pot roasts, at 12½ cents	2.50	
6 pounds neck of beef, at 4 cents	.24	
25 pounds brisket (fresh), at 10 cents	2.50	
22 pounds shoulder clod, at 15 cents	3.30	
3 pounds shoulder meat, at 10 cents	.30	
19 pounds, shin soup bones, at 3 cents	.57	
2 pounds drop tenderloin trimmings, at 5 cents	.10	
10 pounds sausage meat, at 12½ cents	1.25	
20 pounds hamburger, at 17½ cents	3.50	
1½ pounds kidney	.20	
15 pounds shop fat, at 2 cents	.30	
10 pounds bones, at 1 cent	.10	
461¼ pounds		69.63
Gross margin		20.28

Per cent gross margin, 41.11.

[1] Recapitulation of branch house account sales.

2. Dealer, Beaumont, Tex.

Bought 1 side, 262 pounds, at 10½ cents		$27.51
Sold:		
40¾ pounds sirloin, at 20 cents	$8.15	
17¼ pounds porterhouse, at 25 cents	4.31	
35¾ pounds round steak, at 20 cents	7.15	
8½ pounds rump, at 18½ cents	1.53	
30¾ pounds shank soup bones, at 4¼ cents	1.31	
1¼ pounds flank steak, at 20 cents	.25	
9½ pounds first cut, at 20 cents	1.85	
21½ pounds chuck rib roast, at 15 cents	3.19	
16½ pounds chuck steaks, at 19 cents	3.14	
4 pounds drop tenderloin, at 15 cents	.60	
31 pounds hamburger, at 15 cents	4.65	
1 pound kidneys, at 5 cents	.05	
5¼ pounds suet, at 5 cents	.26	
5 pounds dog meat, at 7 cents	.35	
227¼ pounds		36.79
Gross margin		9.28

Per cent gross margin, 33.73.

SUMMARY OF STATEMENT ON LOT 9.

[On basis of 1 animal.]

Shipment and marketing of live cattle:		
Returns per steer at Fort Worth, 1,060 pounds, at 6.65 cents		$70.49
Marketing expenses—		
Freight	$0.85	
Yardage	.25	
Feed and insurance	.05	
Commission	.50	
		1.65
Proceeds to producer		68.84
Slaughtering and wholesaling:		
Cost of live steer to packer		70.49
Proceeds—		
Beef, 566.1 pounds, average 10.50 cents	59.44	
Hide, 73.8 pounds, average 15.1 cents	11.14	
Oleo fat, 40.6 pounds, average 6.29 cents	2.55	
Offal	3.14	
		76.27
Gross margin to packer		5.78
Retailing:		
Cost of beef to retailer		59.44
Proceeds of beef		71.68
Gross margin to retailer		12.24

Lot No. 10.

The animal used in lot No. 10 was a good native 2-year-old grass steer which was raised about 5 miles from Lexington, Ky. It was driven to Lexington November 18, 1914, and slaughtered the same day. The beef was retailed by the local butcher.

Proceeds to producer, 1 steer, 1,238 pounds, at $7.50		$92.85

RETAIL ACCOUNT.

Cost of steer to local butcher		$92.85
Proceeds:		
Beef as per following items—		
Loin, 115 pounds, at 20 cents	$23.00	
Round and rump, 115 pounds, at 16 cents	24.80	
Shoulder and shank, 60 pounds, at 12 cents	7.20	
Plate, 84 pounds, at 12 cents	10.08	
Rib and chuck, 145 pounds, at 15 cents	21.75	
Neck, 24½ pounds	3.35	
Flank, 4 pounds, at 22½ cents	.90	
Flank for chili meat, 8½ pounds	1.00	
Sachet, 3 pounds	.35	
Suet, 22 pounds, at 5 cents	1.10	
Kidney	.10	
Total beef, 581 pounds		$93.63
Hide, 88 pounds, at 14 cents		12.32
Fat, 26 pounds, at 6 cents		1.56
Offal:		
Head, trimmed, 24 pounds, at 60 cents per hundredweight	.14	
Feet, 18 pounds, at 60 cents per hundredweight	.11	
Tongue, 5 pounds, at 7 cents	.35	
Liver, 15 pounds, at 10 cents	1.50	
Heart, 4 pounds, at 7 cents	.28	
Head meat, 5 pounds, at 7 cents	.35	
Tripe, 26 pounds	.40	3.13
Total proceeds to butcher		110.64
Gross margin to butcher		17.79

Per cent gross margin, 18.96.

SUMMARY OF STATEMENTS ON LOT 10.

Cost of live steer to local butcher		$92.85
Proceeds:		
Beef (retail cuts)	$93.63	
Hide, 88 pounds, at 14 cents	12.32	
Fats, 26 pounds, ar 6 cents	1.56	
Offal	3.13	
		110.64
Gross margin to retailer		17.79

Lot No. 11.

The animal used in lot No. 11 was a medium butcher cow. It was hauled in a wagon about 5 miles to La Crosse, Wis., November 23, sold to the Farmers' Cooperative Co., and slaughtered November 24, 1914. The beef was sold to retail dealers in La Crosse.

MARKETING COW.

1 cow, 1,100 pounds, at $4		$44.00
Marketing cost		.80
Proceeds to producer		$43.20

SLAUGHTERING AND WHOLESALING.

Cost of live cow to packer (weight delivered at plant), 1,100 pounds, at $4			$44.00
Proceeds:			
Beef, one side, 248 pounds, at 9 cents	$22.32		
Beef, one side, 236 pounds, at 8¼ cents	19.47		
		$41.79	
Hide, 70 pounds, at 14.5 cents		10.15	
Offal, as per following items—			
Head meat, 6 pounds, at 10½ cents	.63		
Tongue, 4½ pounds, at 8 cents	.36		
Heart, 4½ pounds, at 8 cents	.36		
Liver, 12 pounds, at 7 cents	.84		
Casings	.21		
Blood, 2 gallons, at 20 cents	.40		
Tail, 1½ pounds	.10		
Fats, head fat, tripe, pluck, etc., tanked	.00		
Tallow and tankage, estimated	1.00		
		3.90	
Total proceeds to packer			55.84
Gross margin to packer			11.84

1. Dealer, La Crosse, Wis.

Bought, one side of cow, 248 pounds, at 9 cents		22.32
Sold:		
15¾ pounds sirloin, at 20 cents	3.15	
5⅜ pounds porterhouse, at 25 cents	1.34	
12½ pounds porterhouse, at 18 cents	2.20	
31 1/16 pounds round steak, at 18 cents	5.63	
4½ pounds rump, at 17 cents	.72	
6½ pounds heel, at 15 cents	.97	
6½ pounds shank soup bones	.30	
5 pounds rump bone, at 5 cents	.25	
3⅜ pounds flank cut	.47	
16¼ pounds rib cuts, at 15 cents	2.44	
9⅛ pounds chuck rib roast, at 15 cents	1.37	
2 pounds chuck rib roast, at 18 cents	.36	
9⅞ pounds pot roasts, at 15 cents	1.48	
5 pounds neck of beef, at 10 cents	.50	
2½ pounds cross ribs, at 11 cents	.25	
19¼ pounds pot roasts, at 12½ cents	2.40	
9 pounds pot roasts, at 11 cents	1.00	
2½ pounds brisket (fresh), at 8 cents	.20	
21½ pounds plate piece	2.15	
14½ pounds shin soup bones, at 5 cents	.73	
1¼ pounds sausage meat, at 12½ cents	.16	
6 pounds hamburger (flank), at 15 cents	.90	
1 pound kidneys	.10	
7 pounds suet	.25	
0 pound cod fat	.25	
3 pounds shop fat	.10	
8 pounds bones	.02	
1¼ pounds trimmings, at 12½ cents	.16	
1 pound tallow	.03	
6 pounds waste		
236 1/16		
Total proceeds to retailer		29.86
Gross margin to retailer		7.54

Per cent gross margin, 33.78.

2. Dealer, La Crosse, Wis.

Bought one side of cow, 236 pounds, at 8¼ cents		$19.47
Sold:		
Loin cuts, 44.4 pounds, at 18 cents	$8.00	
Round steaks, 23.9 pounds, at 18 cents	4.30	
Rump, 8.6 pounds, at 12 cents	1.03	
Heel, 5 pounds, at 12 cents	.60	
Flank steak, 1.6 pounds, at 15 cents	.24	
Outside flank (stew), 10 pounds, at 6 cents	.60	
Rib cuts, 11 pounds, at 15 cents	1.65	
Chuck rib roasts, 40 pounds, at 12½ cents	5.00	
Chuck steaks, 10 pounds, at 12½ cents	1.25	
Pot roasts (plate and brisket), 23 pounds, at 10 cents	2.30	
Cross ribs, 32.5 pounds, at 10 cents	3.25	
Shank soup bones, 8.1 pounds, at 6 cents	.49	
Total proceeds to retailer		28.71
Gross margin to retailer		9.24
Per cent gross margin, 47.46.		

SUMMARY OF STATEMENTS ON LOT 11.

Marketing cow:		
Returns from cow, 1,100 pounds, at $4		$44.00
Marketing expense		.80
Proceeds to producer		43.20
Slaughtering and wholesaling:		
Cost of live cow to packer		44.00
Proceeds—		
Beef, 484 pounds, at average 8.62 cents	$41.79	
Hide, 70 pounds, at 14½ cents	10.15	
Offal and fat	3.90	
		55.84
Gross margin to packer		11.84
Retailing:		
Cost of beef to retailer		41.79
Proceeds of beef [1]		54.60
Gross margin to retailer		12.81

Lot No. 12.

The animal used in lot No. 12 was one good Texas steer raised about 6 miles from Paris, Tex. The steer was purchased by the local butcher on October 24, 1914, kept in a feed lot with 150 to 200 other cattle from October 24 to November 19, 1914, and was slaughtered on the latter date at the municipal abattoir. The beef was retailed by the local butcher.

Proceeds to producer, 1 steer,[2] 825 pounds, at $5.50		$45.38

RETAIL ACCOUNT.

Cost of steer to local butcher				$45.38
Proceeds:				
Beef as per following items—				
Loin	43.5	pounds, at 20 cents	$8.70	
Porterhouse	23.5	pounds, at 20 cents	4.70	
Porterhouse	22	pounds, at 17½ cents	3.85	
Round	53.25	pounds, at 20 cents	10.65	
Rump	20.5	pounds, at 17½ cents	3.59	
Hock soup bones	2.5	pounds	.70	
Flank	1.75	pounds, at 20 cents	.35	
Ribs	89.5	pounds, at 17½ cents	15.66	
Neck	10.25	pounds, at 11 cents	1.13	
Plate	62	pounds, at 12½ cents	7.75	
Chuck	25.25	pounds, at 8 cents	2.02	
Chili meat	50.25	pounds, at 11 cents	5.53	
Kidneys	2.75	pounds, at 5 cents	.14	
Tail	2.25	pounds	.10	
Shoulder bone	24	pounds	.50	
Total beef	456.75	pounds		$65.37
Hide, 60 pounds, at 10 cents				6.00
Offal:				
Spleen, lungs, and brain			.15	
Tongue, 5.5 pounds, at 12½ cents			.69	
Liver, 13.5 pounds, at 8 cents			1.08	
				1.92
Total proceeds to butcher				73.29
Gross margin to butcher [3]				27.91
Per cent gross margin, 61.50.				

[1] Based on average per cent gross margin.

[2] Steer fed 26 days in local butcher's lot at estimated cost of $4.92. Weighed 860 pounds at end of this period.

[3] Includes expense of feeding 26 days.

SUMMARY OF STATEMENTS ON LOT 12.

Marketing, slaughtering, and retailing steer:		
Cost of live steer to local butcher		$45.38
Proceeds:		
Beef, retail cuts	$65.37	
Hide, 60 pounds, at 10 cents	6.00	
Offal	1.92	
		73.29
Gross margin to retailer		17.79

Lot No. 13.

The animal used in lot No. 13 was a medium 2-year-old western grass steer raised about 20 miles from Fort Collins, Colo. The steer was driven to Fort Collins on November 28 and slaughtered December 1, 1914, by the local butcher and the beef was retailed by him.

Proceeds to producer, 1 steer, 1,030 pounds, at $6.50 ..... $66.95

RETAIL ACCOUNT.

Cost of steer to local butcher		$66.95
Proceeds:		
Beef as per following items—		
Sirloin, 19¾ pounds, at 25 cents	$4.94	
Porterhouse flank, 6 pounds, at 15 cents	.90	
T-bone, 16½ pounds, at 23 cents	3.80	
Strips for hamburger, 3½ pounds, at 17½ cents	.61	
Round steak, 30¾ pounds, at 25 cents	7.69	
Rump, 7 pounds, at 20 cents	1.40	
Rump, third cut, 2⅜ pounds, at 17½ cents	.41	
Rump, fourth cut, 2½ pounds, at 12½ cents	.31	
Shank soup bone, 12⅛ pounds	.35	
Rump soup bone, 3⅜ pounds	.15	
Heel, 7⅜ pounds, at 20 cents	1.48	
Flank steak, 1⅛ pounds	.28	
Left hind quarter, 119 pounds	22.00	
Scrap, ½ pound, at 5 cents	.03	
Rib cut, 21½ pounds, at 15 cents	3.19	
Rib, 27¼ pounds, at 17½ cents	4.86	
Rib, upper, 27 pounds, at 17½ cents	4.73	
Hamburger meat, 6⅛ pounds, at 17½ cents	1.11	
One-half of forequarter, 87½ pounds, at 11 cents	9.63	
Plate piece, 23½ pounds, at 14 cents	3.29	
Shoulder clod, 37½ pounds, at 17½ cents	6.52	
Shoulder steak, 15⅜ pounds, at 20 cents	3.15	
Shank soup bones, 8⅜ pounds	.35	
Neck, 10½ pounds, at 15 cents	1.58	
Kidneys, 1⅛ pounds	.05	
Suet and bone, 4⅜ pounds	.25	
Total beef, 506.35 pounds		$83.06
Hide, 74 pounds, at 13½ cents		9.81
Offal, 289¾ pounds, at ½ cent	1.45	
Tongue, 3 pounds, at 17½ cents	.53	
Liver, 11 pounds, at 10 cents	1.10	
Blood, 65 pounds, at ½ cent	.33	
Brains, 1½ pounds	.15	
Heart, 3 pounds, at 10 cents	.30	
		3.86
Total proceeds to butcher		96.73
Gross margin to butcher		29.78

Per cent gross margin, 44.51.

SUMMARY OF STATEMENTS OF LOT 13.

Cost of live steer to local butcher		$66.95
Proceeds:		
Beef	$83.06	
Hide, 74 pounds, at 13½ cents	9.81	
Offal	3.86	
		96.73
Gross margin to retailer		29.78

Lot No. 14.

The animal used in lot No. 14 was a good 2-year-old native grass heifer which had been raised on pasture, with a small grain ration and dry roughage in winter. The heifer was driven about 4 miles to Story City, Iowa, December 4, 1914, and slaughtered on the same date. The animal was bought from the farmer by a local stock buyer and was sold to the local butcher at a profit of $1. The beef was retailed by the butcher.

Proceeds to producer, 1 heifer, 1,040 pounds, at $0.625	$65.00
Cost to local shipper-dealer	65.00
Proceeds to local shipper-dealer	66.00
Gross margin to local shipper dealer	1.00

RETAIL ACCOUNT.

Cost of steer to local butcher		$66.00
Proceeds:		
Beef, as per following items—		
84 pounds loin cuts, at 18 cents	$15.12	
78 pounds round steaks, at 18 cents	14.04	
12 pounds bottom round, at 15 cents	1.80	
23 pounds rump, at 12 cents	2.76	
16 pounds shank soup bones, at 4 cents	.64	
32 pounds flank, at 14 cents	4.48	
30 pounds rib cuts, at 15 cents	4.50	
94 pounds chuck cuts, at 15 cents	14.10	
20 pounds pot roasts, at 15 cents	3.00	
26 pounds neck of beef, at 12½ cents	3.25	
12 pounds brisket (fresh), at 12½ cents	1.50	
40 pounds plate piece, at 12½ cents	5.00	
24 pounds shin soup bones, at 5 cents	.60	
7½ pounds sausage meat, at 15 cents	1.13	
6 pounds hamburger, at 15 cents	.90	
16 pounds suet, at 3 cents	.48	
4 pounds shop fat, at 2 cents	.08	
4 pounds bones (not sold).		
528½ pounds		$73.38
Hide, 69 pounds, at 17 cents	11.73	
Fats, rough tallow, 42 pounds, at 2 cents	.84	
Offal—		
Head, dried and sold as bones, estimated weight dry, 12 pounds, at ¾ cent	.09	
Feet, estimated weight dry, 9 pounds, at ¾ cent	.06	
Tongue, 3 pounds, at 15 cents	.45	
Liver, 10¾ pounds, at 8 cents	.86	
Heart, 3 pounds, at 15 cents	.45	
Cheek meat (used for sausage), 4 pounds, at 15 cents	.60	
Total offal	2.51	
Total proceeds		88.46
Gross margin to butcher		22.46
Per cent gross margin, 34.03.		

SUMMARY OF STATEMENTS ON LOT 14.

Cost of live steer to local butcher		$66.00
Proceeds:		
Beef, 528½ pounds	$73.38	
Hide, 69 pounds, at 17 cents	11.73	
Fat, 42 pounds, at 2 cents	.84	
Offal	2.51	
		88.46
Gross margin to local butcher		22.46

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